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INTRODUCTION

A milestone in air pollution control was to have been reached on May 31, 1977. According to the Clean Air Act of 1970 the country's air was to be clean. However, there were no celebrations or political speeches; no television specials or newspaper fanfare. The reason for this lack of fanfare: It didn't happen. While some progress was made, most urban areas were still in violation of federal air quality standards in the summer of 1977. In fact, there were indications as early as 1975 that many rural areas would also violate these standards.[1] The Clean Air Act of 1970 failed to achieve its goal.

Blame for this failure can be shared by many, for there is much to go around:

- Blame Congress for passing an unenforceable and unrealistic law.
- Blame EPA for not effectively implementing and enforcing the law.
- Blame state environmental control agencies for resisting improved controls and, in particular, EPA proposed controls.
- Blame industry for not adequately controlling emissions.
- Blame automobile owners for not installing and maintaining available controls.
- Blame automobile manufacturers for not developing non-polluting cars.
- Blame local governments for not reducing auto travel.
- Blame the courts for levying insignificant fines on violators.
- Blame citizen interest groups for being obstructionists rather than constructionists.

The list is virtually endless and need not be extended.

While each group listed above shares some of the blame for its failure, as well as some of the praise for such success as it has achieved, we feel that there is a more basic cause of this Act's failure.

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1. Wall St. J., Aug. 8, 1975, at 1.

We feel that the fault lies with the philosophy of control embodied in the law and subscribed to by each of the above named groups.

In formulating the Act's approach to pollution control the EPA employed a technocratic philosophy which makes failure inevitable. The methodology employed is as follows: First, expected emissions without control are estimated, the level of emissions allowable if the air quality standard is to be met is calculated, and the difference is the amount of control required. Then, a series of technological fixes are imposed on various sources and the expected effects calculated. When enough technology has been applied to achieve the control requirement, the analyst stops. The efficacy of this methodology turns upon the accuracy of the control estimate made, so that if one or another estimate of control is optimistic the standard will not be met. However, since the control agency has already published the technological fixes prescribed in the initial plan to the various emitters involved, it is politically infeasible to ask the conforming emitters to do even more because someone else has done less. Consequently any error of optimism causes the standard to be violated.

One way to solve this problem is to make all control estimates pessimistic, so that some controls will be better than expected, and the standard will be met. Unfortunately, this strategy also faces difficulties because the cost of control to emitters will increase with stricter controls, thus increasing political and legal resistance to control. Because of these political and legal pressures, the ability of the control agency to sustain controls based on pessimistic assumptions is at least highly doubtful.

It would appear that a high degree of precision in technical control effects estimates is necessary in order to implement the law through this approach. In fact such precision does not exist; all estimates of necessary emission reductions and of the effectiveness of control technologies are highly uncertain, though the EPA has repeatedly used information of questionable accuracy as if it were absolutely true. Victor Sussman, Director, Bureau of Air Quality and Noise Control, Department of Environmental Resources, State of Pennsylvania, characterized EPA's approach to implementation plans as "Garbage In-Gospel Out."[2] He argues that EPA has been inflexible in considering alternative technical assessments, though, as we shall see below, seemingly small errors in technical assessments can have an overwhelming effect on policy. For example, a difference in the

2. *Implementation of Clean Air Act Amendments of 1970: Hearings Before the Subcomm. on Air and Water Pollution of the Comm. on Public Works.* 92d Cong., 2d Sess. 720 (1972) (statement of Victor H. Sussman).

technology used to measure air quality could have reduced from 22 to 10 the estimated number of major cities which violated the photochemical oxidant standard in 1977.[3]

We do not suggest that the EPA staff is stupid; in fact, we find them quite competent. Rather, the problem stems from the fact that while lack of knowledge and bureaucratic/political incentives generate a wide range of opinion on most technical matters, the technocratic philosophy does not allow for widely differing and rapidly changing technical assessments. The result, inevitably, is failure to reach the prescribed goals.

This technocratic approach is coupled with a preemption provision which makes differences in opinion on technology even more crucial. Suppose the EPA adopts a deliberately pessimistic set of technical assessments in order to insure that ambient standards are achieved. State control agencies would view these assessments as unrealistic because adoption of EPA's position would cost the State and its residents a substantial sum. In such a case there would be at least two options for a State: One, to convince EPA that more optimistic technical assessments are justified; the other, to proceed with the State plan as the State agency wishes and to report to EPA that the standard(s) will not be achieved. Under the first option the strategy would work for minor discrepencies, but for major differences of opinion EPA would be very reluctant to change. Under the second, EPA then would have no choice but to reject the State plan and promulgate its own, preempting the State and relieving it of all responsibility for control. The Act sets up a takeover possibility and the incentives generated by EPA's inflexibility in technical assessments make it at least highly likely, if not certain, that the takeover would occur. This would leave EPA in the position of having to produce and enforce control plans for all the difficult air pollution areas in the country and the entire program would then become a federal responsibility which would require massive inputs of money and manpower to be effective. Lacking these resources, the federal takeover would also fail.

In this paper we document federal failures in the control area, explaining what has happened since the passage of the 1970 Clean Air Act, emphasizing the control of photochemical oxidant (smog) in Los Angeles. Although the case study is employed primarily to provide substance to our review of the implementation of the Act, we feel that the failure of the Act to control oxidants is indicative of a general problem endemic in the philosophy of the Act. Los Angeles

3. See Table I at p. 250 and Table II at p. 260.

was chosen for this case study because of the unique role it has played in the passage of the Act and in its implementation by EPA. Next, we will analyze the effects one might expect from the proposed amendments currently under consideration in Congress. Finally, we will suggest some of the issues which a new law would have to address if it is to be fully effective. We conclude from this analysis that the proposed amendments are only marginally better at solving the basic issues raised by our analysis. We strongly urge Congress to consider alternative philosophies.

CHRONOLOGY OF FAILURE

The 1970 "Clean Air Act" was, in reality, a set of amendments to the original 1955 Clean Air Act, although the 1955 Act had been amended and expanded on numerous occasions before 1970. The 1970 Amendments, then, reflect both the new ideas and concerns of Congress and the old successes and failures of previous legislative efforts.

The original and unchanged purpose of the Clean Air Act was to "protect the health and welfare" of the public by protecting the integrity of the public's "most valuable resource," its air. The original Act and each amendment emphasize as a basic principle the central role of the States and their local control agencies in the establishment and enforcement of the air quality standards necessary for the achievement of this purpose.

The original Act provided only for Federal research funds. These funds were rationalized on the basis of (1) a need for coordination of all local research and control efforts; (2) a need for accelerated research programs; (3) the difficulty in obtaining local funds for pollution control; and finally, (4) the rapidity of the growth of the pollution problem.

Each amendment after 1955 modified the Act on the grounds of the increasing importance of the above reasons. The air pollution problem was seen as growing and threatening to grow even larger, with increased industrialization and urbanization, resulting in even greater threats to the public health and welfare. The need for increased levels of research and state coordination was always emphasized, and the problem of interstate air pollution was given ever increasing emphasis. The automobile was recognized early as constituting a special problem, for it was both a significant source of pollution and an unusually difficult source to control because of its mobility and its mass production requirements.

At the same time, the states were increasingly viewed by Congress

as impotent without Federal aid as the scope of the pollution problem expanded. Initially this aid was in the form of research information and funds, but in time it was decided that many aspects of the problem were simply not amenable to state action. The states could not control mobile sources without major infringements on interstate commerce, production efficiency, etc.; they could not control the movement of air-borne pollution across state lines; and they were subject to the "blackmail" of industries threatening to leave for "pollution havens" where standards would be less strictly enforced.

Independent of these reasons for the inability of the states to control pollution more effectively, the Congress also showed increasing impatience with the states for failing to take faster, more aggressive action. The states were criticized for not establishing control regions, emission standards, and air quality standards, and for their lax enforcement procedures. They were also mildly faulted for establishing different standards that resulted in confusion for the automobile industry and the existence of "pollution havens."

The effect of the various amendments to the 1955 Act has been an increasingly significant amount of direct Federal participation in the promulgation and enforcement of air quality and emission standards because of perceived inadequacies on the part of the states.

The 1970 Amendments

The 1970 Amendments to the Clean Air Act followed the basic format of the previous legislation, but they modified its content in two significant areas. First, the 1970 Amendments strengthened and clarified the Federal role in the development of air quality regions, air quality standards, and State-formulated implementation plans. The major enforcement tool for this role is the threat of a Federal preemption of state control programs. Second, the Amendments set specific emission standards for mobile sources to be achieved by specific dates. This was in contrast to the previous legislation which had left standard setting to the discretion of the Secretary of HEW. Together, these two basic modifications of the Clean Air Act served to dramatically increase the Federal government's authority and also its responsibility for air pollution abatement.

The 1967 Amendments provided for a system of state administered air quality control regions backed up with Federal money, research expertise, and enforcement authority. But evidently this was not sufficient, for the legislation was not fully enforced and it contained certain loopholes and ambiguities that encouraged inaction on the part of both the Federal Administration and the regional and

state authorities. By 1970, it was clear that (1) the air quality control regions were not being set up very rapidly; (2) the air quality criteria and recommendations for control techniques were not being issued; and (3) the state implementation plans were inadequate. It was obvious that the Secretary did not have the authority to impose Federal implementation plans and that there was general confusion over the roles of emission and ambient standards in the implementation plans. It was also realized that the variation in air quality standards adopted by the different regions led to the possibility of "competition" between the regions for industry, with industries playing the regions off against each other for less stringent standards. The 1970 Amendments were intended to remedy these flaws.

The 1970 Amendments set up a procedure which insured that air quality standards, control techniques, and state implementation plans were forthcoming on a timely basis. Section 107 requires EPA to designate air quality control regions where needed within 90 days of passage of the Amendments. Section 108 requires EPA to publish criteria documents and control techniques within 12 months. Section 109 requires EPA to propose national primary air quality standards within 30 days and promulgate them no less than 90 days after proposal. Section 110 requires that each state produce and submit to EPA a State Implementation Plan (SIP) to meet the primary standards not more than nine months after the standard is promulgated. The SIP must show compliance with the primary standard within three years (by approximately May 31, 1975). However, if a state shows that the application of "reasonably available alternative" means of attaining the primary standard will not achieve the standard within three years, the Administrator may extend the date of compliance two more years (to approximately May 31, 1977).[4] If EPA disapproves the SIP submitted by a state, the Administrator must promptly prepare and promulgate a SIP for the state. Section 113 allows EPA to assume enforcement of SIP provisions against any or all sources if the Administrator determines that the state has failed to effectively enforce the approved SIP. Section 116 allows a state to adopt and enforce more stringent emission standards than those in its SIP but does not allow it to adopt and enforce less stringent emission standards.

The effect of these procedures is clear: Each state must adopt control plans which satisfy EPA or EPA will take over. The force behind the SIP process is clearly federal preemption and the Amendments do not allow for extensions beyond 1977 regardless of cost or

4. 42 U.S.C. § 1857c-5(e)(1)(B) (1970).

social impact. The charge given the States and EPA was to clean up the air by 1977 regardless of cost or technical feasibility.

Section 202 set minimum emission standards for new automobiles. This provision was to have been met by 1976. Failure by manufacturers would mean inability to sell new cars. (While this provision is significant it is not central to our argument and will not be discussed in detail).

The outcome of the legislative debate was decidedly not the minor housekeeping initially intended. The inclusion of the two key provisions transformed the Clean Air Act from a flexible cooperative act designed to reach a reasonable compromise between Congressional intent and state desires to a brinkmanship act. Two brinks were defined: One was the date when Federal primary ambient air quality standards would be met, the second was the automotive emission standards.

As a result, the discretion of the states was limited to the control strategies for existing sources. They lost the power to determine air quality standards, new source emission standards, and automotive emission standards. As we shall see below, even the right to determine how to clean up existing sources was essentially eliminated through EPA interpretation of State Implementation Plan requirements.

The Senate Committee Report specifically rejects the notion of technical feasibility in ambient air quality standards[5] and in fact, it recognizes that the ambient standards may require as much as seventy-five percent reduction of traffic in some metropolitan areas. Furthermore, the Committee argued that existing emitters should clean up or be closed down. Thus, it cannot be argued that the Committee or the Senate was unaware of the implications of the Amendments.

Citing a paper by Delbert S. Barth, the Committee showed that it anticipated meeting an oxidant standard of 0.06 ppm.[6] It was recog-

5. S. REP. NO. 91-1196, 91st Cong., 2d Sess. 2 (1970).

6. Barth, *Federal Motor Vehicle Goals for CO, HC, and NOx Based on Desired Air Quality Levels,* 20 J. AIR POLLUTION CONT. A. 521 (1970). Photochemical oxidants are comprised of various compounds but the primary ingredients are ozone (O_3) and nitrogen dioxide (NO_2). They are the result of the chemical reaction of hydrocarbons (HC) and nitrogen oxide (NO) in the presence of ultraviolet light (sun light). The amount of Photochemical oxidant formed depends upon the amount of HC and NO present in the air as well as their relative mix and the amount of sunlight available. Its concentration in the air depends upon the above and the movement of air. In Los Angeles (the worst case), the potential for a photochemical oxidant problem is great because of low temperature inversion which reduces the amount of air in which the oxidants can be mixed and because of the mountains which ring the area and reduce the movement of air outside the Los Angeles basin.

nized that the automotive emission standards were proposed by the Administration for 1980 in order to meet ambient air quality goals by 1990, yet the Committee proposed those standards for 1975 model year cars.[7] The source of the year 1975 remains unclear. One observer suggests that the 1975 date was politically motivated. It came out of a White House Conference between the Administration and the Public Works Committee Staff. The Administration wanted the emission standards for 1980 but the staff adopted 1975 in order to have Muskie look tougher on the environment.[8] Again, the Committee ignored the repeated warnings in the Barth paper concerning the preliminary nature of his findings. The warnings of John Maga that stationary sources would have to be controlled to the same degree was also disregarded.[9] Gubrud's explanation and ours is that Congress had a strong anti-automobile, pro-transit preference (bias?).[10]

Another implication of the Committee Report is that by accepting the Barth paper they accepted the "worst case" technocratic philosophy of the Administration. Barth argues that the national goal or standard for air quality should be based on the "worst city" (Los Angeles) and should assume the maximum predicted growth rate for automobiles.[11] This caused both the Administration and the Committee to ignore possible gains from allowing different areas of the country to have higher or lower pollution levels and/or less control of automotive (and other) emissions. Given the acknowledged high costs of the Act, these gains could be substantial.[12]

Brinkmanship only works if the threats made are credible. It seems incongruous to us that State agencies and automobile manufacturers took this law seriously since these threats seem quite incredible. In the face of massive resistance such controls would clearly fall. EPA's credibility depended on little or no resistance and politically small enforcement costs against isolated pockets of resistance. Yet, both the ambient air quality and the automotive emission standards were known to be far beyond then present (1970) technology.[13] Members

7. *Supra* note 6, at 25-7.

8. Interview with Arne E. Gubrud, American Petroleum Institute, Washington, D.C., Feb. 19, 1976.

9. Maga, *Discussion*, 20 J. AIR POLLUTION CONT. A. 524 (1970).

10. Gubrud, *The Clean Air Act and Mobile-Source Pollution Control*, 4 ECOLOGY L. Q. 523, 526 (1975).

11. *See supra* note 6.

12. For a discussion of regional versus national air quality standards, *see* James, *Optimal Pollution Control and Trade in Collective Goods*, 4 J. PUB. ECON. (1974).

13. *Implementation of Clean Air Act Amendments of 1970: Hearings Before the Subcomm. on Air and Water Pollution of the Comm. on Public Works*, 92d Cong., 2d Sess. 911-12 (1972) (statement of Sen. Tunney) clearly reiterates that congressional intent was to force technology.

of the subcommittee could reasonably expect massive resistance. This perhaps explains why these two major provisions were not publicly debated prior to their passage.[14] While the massive resistance did not materialize quickly, it finally took shape as state implementation plans were disapproved and the time for implementing stringent standards drew near. We leave to the reader the task of explaining why this approach was taken. It is sufficient for our purposes to note the adoption of the technocratic philosophy. Our goal is to explore its implementation.

Oxidant Standard

The U.S. Environmental Protection Agency (EPA) was formed on December 2, 1970.[15] One of its first tasks was to establish the ambient air quality standards required in the 1970 Amendments. On January 30, 1971 EPA published several proposed ambient standards, including one for photochemical oxidants. The proposed oxidant standards was 0.06 ppm hourly average not to be exceeded more than once per year.[16] This is the number suggested in Barth's automotive paper and included in the Senate's Public Works Committee Report;[17] it was based upon the information in the Oxidant Criteria Document.[18] The proposed standard met with substantial criticism, particularly from California. Apparently California argued that 0.06 ppm is at or very close to the background level, that which would be reached without any emissions from mobile and stationary sources.[19] Further, they argued that repeated review by medical experts indicated that no adverse health effects would result from a standard of 0.10 ppm (California's state standard). EPA "compromised" and promulgated a standard of 0.08 ppm. There appears to be no technical basis upon which to favor the federal standard over the California standard.

The choice of what constitutes the "adequate margin of safety" required by the Act is arbitrary. One explanation common in the halls of EPA for the choice of a level below California's standard was

14. *Id.* at 1273 (statement of Ernest S. Starkman).

15. EPA was established by executive Reorganization Plan No. 3 of 1970, 35 Fed. Reg. 15632 (1970), to become effective on Dec. 2, 1970. Under this plan various regulatory functions were transferred to EPA from the Interior Department, HEW, the Atomic Energy Commission, the Federal Radiation Council, and the Council on the Environment.

16. 36 Fed. Reg. 1503 (1971).

17. Barth, *supra* note 6, at 519.

18. U.S. Department of Health, Education, and Welfare, National Air Pollution Control Administration, Air Quality Criteria for Photochemical Oxidants (March 1970).

19. Interview with John Maga, former Executive Director of the California Air Resources Board April 1, 1975; interview with Robert G. Lunche, head of Los Angeles County Air Pollution Control District, April 3, 1975.

that EPA desired to appear tougher than California on air pollution. In the 1972 oversite hearings on the act, Mr. Peter Schabarum, Los Angeles County Board of Supervisors, also suggested this "one-upmanship" explanation for the EPA decision.[20]

A careful review of the technical basis for the oxidant standard reveals some highly significant errors in interpretation. On the day before the first public hearing in the 1970 Clean Air Act Amendments several Air Quality Criteria Documents were published, as required by the 1967 Clean Air Act.[21] Their purpose was to provide basic information on the detrimental effects of various air pollutants so that states would have the best scientific knowledge available upon which to base their air quality standards. It may be assumed that the date of publication was not accidental, as the Administration was under pressure from various Senators and Congressmen for what was perceived as deliberate foot-dragging. In fact, John Middleton, the head of the National Air Pollution Control Administration (NAPCA) had put considerable pressure on his staff to get these documents out by this date.[22] The hydrocarbon and oxident criteria documents are of particular interest because of the role they played in EPA decisions. The content of each may have been substantially affected by this pressure.

A. Hydrocarbon Criteria Document

The hydrocarbon Criteria Document, which explored the direct effects of HC on human health, plants, and animals, found the effects to be minimal. It also recognized HC to be a percursor to photochemical oxidant. The process of developing the HC/oxidant relationship and the findings play a significant role in future events.

NAPCA officials had set deadlines for completion of the HC criteria document[23] and contractors had been hired to develop a viable relationship between HC and oxidants. However, within two months of the date on which the Criteria Document was due the contractors had not yet produced anything of value.[24] Therefore, Dr. Delbert

20. *Implementation of the Clean Air Act Amendments of 1970: Hearings before the Subcomm. on Air and Water Pollution of the Comm. on Public Works*, 92d Cong., 2d Sess. 916 (1972) (statement of Peter Schabarum).

21. Air Quality Act of 1967, §107(b)(1), 42 U.S.C. §185c-2(b)(1) (1970).

22. Interview with Dr. E. A. Schuck, E.P.A., Las Vegas, April 6, 1975.

23. This section is based primarily on the Schuck interview, *id.*

24. S. REP. NO. 402, 90th Cong., 1st Sess. (1967) sheds light on the generation of the Criteria Document. This report accompanied S. 780 which amended the Air Quality Act of 1967, *supra* note 21. On page 3 it noted that the Public Works Committee understood that the Criterion on CO, particulates, and oxidants would be released within the next six months.

Barth held a meeting of various NAPCA personnel in Cincinnati in order to develop the required relationship to meet the deadlines. The first step was to plot the available data on HC and oxidants and to attempt a fit of a regression line through the data. Unfortunately, the regression produced a negative slope, which implied that more HC emissions yield less oxidants: a result that was thought to be clearly wrong.[25] Dr. Barth noticed that there were several data points which lay substantially above the mass of data; upon investigation it was discovered that these data points represented days characterized by maximum sun and low inversion layers (most of these observations were for Los Angeles). Thus, they represented ideal conditions for oxidant formation. These observations led Dr. Barth to the concept of the upper limit curve employed in the Criteria Document.

It is curious to note the failure to discuss the effect of nitrogen oxides (NOx) on the HC/oxidant relationship. Various smog chamber studies had clearly indicated that the oxidant formation potential of HC and NOx depended upon their ratio as well as their absolute levels.[26] Furthermore, the HC/oxidant relationship produced in the Criteria Document was based on 6:00-9:00 a.m. HC concentrations and peak oxidant at the same point, yet it was known that the movement of the air mass precluded such a direct relationship. Rather, 6:00-9:00 a.m. HC concentrations should have been related to peak oxidant at some point downwind.[27] Perhaps the time constraint explains the failure to fully explore these effects. In any case, the result was the simplistic and statistically dubious relationship published in the Criteria Document. Nevertheless, as we saw above, this relationship, doubtful as it was, became crystalized into law and into practice.

B. Oxidant Criteria Document

The Photochemical Oxidant Criteria Document contains incorrect information which was later used to set the national air quality standard for oxidants. One of the three principal studies cited in the Resume of this Document was a study of severe asthmatics. The Criteria Document concludes that "an increased frequency of asthma

25. More recent "smog chamber" studies indicate that this is possible, *see* John R. Holmes, ARB Projections of Los Angeles Air Quality (paper presented at Conf. on Strategies for Air Pollution Control in the South Coast Air Basin, Cal. Inst. Tech., Dec. 23, 1975).

26. J. Pitts, *et al.*, Atmospheric Chemistry and Physics, Project Clean Air Task Force Reports, vol. 4 (U. Cal. 1970).

27. J. Behar, Simulation Model of Air Pollution Photochemistry, Project Clean Air Research Report No. 2-14 (U. Cal. 1970). A discussion of this air movement is included in the Criteria Document but plays no role in determining the HC/oxidant recommendation, HC Criteria Document at 5-7 to 5-11.

attacks in a small proportion of subjects with this disease was shown on days when oxidant concentrations exceeded peak values of 250 $\mu g/m^3$ (0.13 ppm), a level that would be associated with an hourly average concentration ranging from 100 to 120 $\mu g/m^3$ (0.05 to 0.06 ppm)."[28] The study actually showed no effect at 0.13 ppm but did show an effect above 0.25 ppm.[29] This error in interpretation, which was first pointed out in print in 1972,[30] became widely acknowledged within EPA in early 1973,[31] and finally corrected by EPA in 1974.[32] The correction, contained in an Errata sheet, claimed that this effect occurred at "an hourly average concentration as low as 300 $\mu g/m^3$ (0.15 ppm)."[33]

In addition, the Errata derived a different conversion rate between five minute and one hour averages for oxidants. In developing this new conversion rate the Errata observed a median ratio of 1.13 and ". . . a single maximum of 1.60."[34] Although the single best estimate of the conversion rate would be the mean of the observations, the Errata employed 1.60. Employing the maximum value implies that one is virtually certain that the true hourly concentration lies below the calculated number for the hourly average. This, of course, implies that a very high margin of safety has been applied at this point. One might question whether this is the appropriate place and method for providing safety, especially since an additional safety factor is incorporated in the standard setting process as well. If the median had been employed[35] in the case cited above, the effect would occur above 0.22 ppm rather than at 0.15 ppm.

28. The small proportion of asthmatics experiencing attacks was actually about five percent, U.S. Department of Health, Education, and Welfare, *supra* note 18.

29. The underlying scientific basis for the Criteria Document is the assumption that it is possible to determine "threshold" concentrations of pollutants below which human life is not endangered. The threshold approach implies that as long as the standards are not violated, concentrations of pollutants are harmless. Scientists have never fully accepted health effects thresholds and have expressed misgivings which center around two points. First, it is feared that the known information about health effects is probably more reflective of the sensitivity of existing measurement technology than a damage threshold. *Air Pollution–1970: Hearings Before the Subcomm. on Air and Water Pollution of the Comm. on Public Works,* 91st Cong., 2d Sess. 1490 (1970) (statement of Dr. James Middleton). Second, little is known about the cumulative effects of continual loading of the atmosphere with pollutants.

30. Technical Advisory Committee, An Evaluation of a Medical Advisory Notice to Persons with Respiratory Disease or Coronary Artery Disease 16 (report to Cal. Air Resources Board, June, 1972).

31. Downing, *Controlling Oxidants in Los Angeles,* 4 ENVT'L AFF. 711 (1975).

32. Errata For Air Quality Criteria for Photochemical Oxidants, received by Los Angeles Air Pollution Control District, July 16, 1974 [hereinafter cited as Errata].

33. *Id.* at 2.

34. *Id.*

35. Note that the mean would be preferred since it provides the best estimate of the true relationship, but it is not available to us. The median may be higher or lower than the mean, but it is probably slightly lower in this case.

The Errata also developed a threshold for the effects of oxidants on an athlete's performance, a second of the three major health effects employed to set the oxidant standard. This changed the estimate of the lowest concentration which might have affected athletes from 0.03 ppm to 0.07 ppm. The Errata further noted that this effect may not take place below 0.16 ppm, thus reflecting the range of uncertainty in this study.[36]

Finally, the Errata removed all conversions of peak concentrations to hourly concentrations for eye irritation.[37] Previously, the Resume had suggested that eye irritation was associated with hourly concentrations of 0.03 to 0.05 ppm oxidant.[38] Eye irritation, which is observed in only a few people at 0.10 ppm, is the third principal health effect cited in setting the oxidant standard.

This review of the oxidant Criteria Document shows that mistakes were made in interpreting each of the three human health effect studies cited in the Resume and later employed in the setting of the Federal ambient air quality standard for photochemical oxidant.[39] It is important to note that all three errors generated the impression that effects were felt at lower levels than are supported by the studies. Furthermore, the asthma study suggested that no effects were found at 0.13 ppm.[40] In 1973, a report for the Senate Public Works Committee by the National Academy of Science provided further evidence of the inadequacy of the basis for the oxidant standard[41] by finding that between 3 and 5 percent of the population may be considered to have some form of bronchial asthma. The report found that of this group no more than 5 percent of all asthmatics can relate their attacks to photochemical oxidants.[42] This means that if no errors had been made, the standard was set to avoid any asthma attacks, in the most sensitive one quarter of one percent of the population.

But errors were made and they had a substantial effect on policy. We have shown that a more correct interpretation of the asthmatics

36. Errata, *supra* note 32, at 2.

37. *Id.* at 3.

38. *Id.* at 10-13.

39. Moreover, in addition to the misinterpretation of the data, the Administrator used studies in which the adequacy of the data base was highly suspect. The conclusion about asthmatic patients was derived from a single study of 137 patients, Gubrud, *supra* note 10. The conclusions about student athletes were based on a single study of 21 track meets, Barth, *supra* note 6.

40. Downing, *supra* note 31.

41. NATIONAL ACADEMY OF SCIENCES & NATIONAL ACADEMY OF ENGINEERING, AIR QUALITY AND AUTOMOBILE EMISSION CONTROL, vol. 2, at 350-51 (1973) (prepared for the Sen. Comm. on Public Works, pursuant to S. Res. 135).

42. *Id.* at 49.

study showed effects at 0.22 ppm. Allowing for an "adequate margin of safety," a standard of 0.18 ppm, which is very much different from the 0.08 ppm standard that was promulgated, might have been appropriate.[43] Just how such a standard could affect policy can be seen by comparing the number of AQCR's requiring major traffic controls in 1977 under both standards. In 1973, EPA estimated that 22 AQCR's would exceed the 0.08 ppm standard in 1977 without major traffic controls (See Table I). Employing the 0.18 ppm standard only 4 AQCR's in the country would exceed the standard. Three of these are in California (Los Angeles, Sacramento, and San Francisco); the remaining AQCR, Houston-Galveston, exceeds the standard because of stationary source emissions, so that traffic controls would have no effect. Even in 1990, by which time EPA predicts that growth will cause increases in oxidant levels, only 5 AQCR's exceed the alternative standard, while 12 exceed the current standard; of these, two of the five exceed the standard because of non-automotive sources.

It would appear then that just one seemingly minor error in interpreting technical data can have a major influence on policy. Instead of a massive national effort to control emissions at costly levels, the problem appears to be localized into a few areas of the country requiring special attention.

TABLE I

30 Major AQCR's

	Exceed Oxidant Standards Without Traffic Control		
	1977	*1980*	*1990*
Present Federal Standard (0.08 ppm)	22	18	12
Alternative Standard (0.18 ppm)	4	4	5

Source: Table III in Control of Motor Vehicle Related Pollutants Analysis (Internal EPA memorandum from Robert Sansom, Assistant Administrator for Air and Water Programs, Feb. 23, 1973).

This, however, is not the only possible technical error. For example, the Criteria Document relates health effects to maximum hourly average concentrations of oxidant without regard to exposure

43. We are not suggesting that 0.18 is more correct than some other number.

for longer periods. By implication, it argues that peak oxidants are the prime, if not exclusive, cause of health damages. However, it states the criteria for many other air pollutants in terms of *both* peaks and exposure over a longer period of time. Thus, we are not capable of accurately assessing the extent of the effect the choice of peak rather than exposure might have on required emission control.

However, we can get some general idea by examining the effect in Los Angeles, where the Federal standard requires a 90 percent reduction of peak oxidants. Instead of reducing peaks by 90 percent we could reduce exposure by the same 90 percent, resulting in peak levels of approximately 0.20 ppm.[44] It is significant that an 82 percent reduction in reactive hydrocarbon (RHC) emissions results in a 90 percent reduction in exposure, while a greater, 93 percent reduction in RHC emissions is required for a 90 percent reduction in peak. The difference between the two alternatives is the difference between a 20 percent vehicle miles traveled (VMT) reduction and a 90 percent VMT reduction for Los Angeles. In other words, use of exposure instead of peak oxidant as the health criteria could have translated the Los Angeles case from an obviously unattainable goal into a difficult but feasible standard.

Adding this perspective to the reinterpretation of the standard discussed above, it is possible, and certainly as defensible as the current EPA position, the only three AQCR's in the country require major attention to HC controls other than the new source and new automobile controls in process. Under this perspective, the entire SIP process may not have been necessary.

The significance of the Criteria Documents and their presumed correctness becomes apparent in the institutions created by the Act and in review by the courts. Although the criteria form the foundation of the Act, there is no internal mechanism for questioning their scientific validity and, once promulgated, challengers of the standards based on these criteria are narrowly circumscribed. There is no provision for any type of periodic review of published criteria, judicial or otherwise, in Sections 108 or 307.[45] The Administrator is charged only to "from time to time review, and, as appropriate, modify, and reissue any Criteria."[46] The strength of the presumption of correctness of the Criteria is implicit in the requirement that proposed air quality standards be published within 30 days of the enactment of the Amendments.[47] Although the Administrator is

44. E. Schuck, Review of Ambient Oxidant-Precurson Relationships in the South Coast Air Basin (internal E.P.A. memorandum, April 24, 1973).
45. Clean Air Act Amendments, § §108, 307, 42 U.S.C. §1857c-3, §1857h-5 (1970).
46. *Id.* §108(c), 42 U.S.C. §1857c-3(c) (1970).
47. *Id.* §109(a)(1)(A), 42 U.S.C. §1857c-4(a)(1)(A) (1970).

directed to accept written comment on proposed air quality standards within 90 days of publication, he is under no obligation to incorporate such comments in his decisions.[48]

Section 307 circumscribes the judicial review of air quality standards and the Criteria Documents upon which they are based in a number of ways. First, judicial review of new or revised criteria is not available until after promulgation of the air quality standards.[49] Second, in order to maintain the integrity of the time frame specified in the Act, review of air quality standards is precluded after 30 days of promulgation. Review is possible, however, if "such petition is based solely on grounds arising after such 30th day."[50] Third, review of the air quality standards is not allowed in civil or criminal enforcement proceedings.[51] The objective of this provision was both to maintain the integrity of the time frame and to prevent the courts from substituting a common law definition of pollution.

Although challenges of the air quality standards under Section 307 are possible, they would, of course, be very difficult. The criterion for protecting public health with an "adequate margin of safety" is sufficiently ambiguous, and the health data so poor, that it is difficult to prove that a standard is wrong. The likelihood of judicial or administrative review of criteria is further reduced by the reluctance of the courts to evaluate complex scientific issues involving technology assessment or matters which traditionally have been left to agency discretion. The courts have limited their scrutiny of internal agency deliberations to procedural grounds and other matters of law. With respect to procedural grounds, the constraints imposed by the Administrative Procedure Act have been important in determining the reviewability of standards. Challenges to agency standard setting require that an abuse of administrative discretion be shown. A charge of "arbitrary and capricious" has proven difficult to substantiate in light of the breadth of discretion granted to the Administrator by the Act and by past federal court rulings in such matters.[52]

It appears to us that judicial review of the oxidant Criteria might be obtained by another avenue. An alternative approach would be to

48. *Id.* §109(b)(1), 42 U.S.C. §1857c-4(b)(1) (1970).
49. *Id.* §307(b)(1), 42 U.S.C. §1857h-5(b)(1) (1970).
50. *Id.* §307(b)(2), 42 U.S.C. §1857h-5(b)(2) (1970).
51. 42 U.S.C. § 1857h-5(b)(1) (1970) provides for review of national primary or secondary air quality standards and actions concerning § § 110, 111, 112, 119, and 202 of the Clean Air Act Amendments.
52. The inadequacy of the present system of administrative law to deal with complex scientific and technological issues was evident in International Harvester Co. v. Ruckelshaus, 478 F.2d 615 (D.C. Cir. 1973). *See also* Comment, *The Automobile Controversy–Federal Control of Vehicular Emissions,* 4 ECOLOGY L. Q. 661, 667 (1974). It should also be

bring action under Section 304.[53] Such a challenge would argue that the Administrator had failed to perform a non-discretionary duty under Section 108 by not acting on information about the radiomimetic (radiation-like) effects of oxidants on animals. These effects are thought to be similar to those resulting from exposures to radiation of many times the levels considered safe for man by the Atomic Energy Commission.

A study in 1964 first reported radiomimetic effects on animals at 0.20 ppm oxidant.[54] Additional results were published in 1971.[55] Epidemiologists feel that any level of radiation exposure causes damage to man. From this view it follows that the threshold approach used in the Clean Air Act would not be applicable to the control of photochemical oxidants. The fact that thresholds, the maximum exposure level which causes no adverse health effects in man, have never received widespread acceptance by the scientific community reinforces this view.[56] The trend toward rejection of thresholds and the studies of radiomimetic effects could be argued to provide adequate grounds for review of the oxidant Criteria, so that in failing to make such a reassessment the Administrator breached a nondiscretionary duty.

If we ignore the radiomimetic studies and consider the mistakes made in interpreting the study of asthmatics,[57] no health effects from oxidants have been found in man below 0.20 ppm. Adding a "reasonable margin of safety" to this observation may yield a primary standard of 0.15-0.18 ppm rather than the 0.08 figure settled on by EPA. On the other hand, if there truly are radiomimetic effects, as indicated by the studies cited, and the threshold approach is not possible, as the Atomic Energy Commission argues, then a standard of 0.00 ppm is justifiable within the context of the Act. Such a conclusion would be clearly unattainable since background levels range from 0.02 ppm to 0.06 ppm. Although the standard

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noted, however, that courts have not always been reluctant to substitute their judgment for the Administrator's. In Ethyl Corp. v. Environmental Protection Agency, 478 F.2d 47 (4th Cir. 1973), the Court of Appeals for the D.C. Circuit overturned EPA regulations to phase out the lead used in gasoline as arbitrary and capricious. It was determined that the EPA had not reached a factually supported determination that lead emissions from automobiles contributed a measurable increment of lead to the human body.

53. Clean Air Act Amendments, §304, 42 U.S.C. §1857h-2(a)(2) (1970).

54. Brinkman, Lambert & Venings, *Radiomimetic Toxicity of Ozoned Air*, 1 LANCET 133 (1964).

55. R. Zelac, *et al.*, *Labeled Ozone as a Mutagen I and II*, 4 ENVT'L RESEARCH 262 (1971).

56. *See supra* note 29.

57. *See supra* note 39.

dictated by scientific evidence would be an unworkable definition of clean air for EPA, it is surprising that no one has brought such a case.

City of Riverside vs. Ruckelshaus

Upon promulgation of the ambient standards for the first five pollutants, including photochemical oxidants, each state had nine months to submit a State Implementation Plan (SIP) to EPA.[58] These plans were to detail the control strategies each state would adopt to reach the federal ambient standards by June, 1975. Given the date of promulgation of the oxidant standard, the SIPs became due on January 30, 1972.[59]

The California Implementation Plan for achieving and maintaining national ambient air quality standards was formally submitted to EPA on February 21, 1972.[60] Although a Transportation Control Plan (TCP)[61] was required as part of a State Implementation Plan (SIP) in areas where the combination of controls on stationary sources and federal emission standards for new automobiles would not be sufficient to meet air quality standards by May 31, 1975, the California plan, as initially submitted, was not required to include transportation controls. EPA had announced in August 1971 that the submittal of a separate TCP could be deferred until February 12, 1973.[62] This gave the states an additional year beyond the January 30, 1972 deadline for submitting the SIPs.

On May 31, 1972, substantial portions of the plan proposed by California were disapproved by EPA Administrator William D. Ruckelshaus.[63] EPA approved the California plan insofar as it related to CO and SO_2 and rejected portions relating to NO_2, particulates, and photochemical oxidants. The California plan showed on its face that the national primary ambient air quality standards for CO and SO_2 would be attained by June 1, 1975 in the South Coast Air Basin. It further indicated, however, that the national primary ambient air quality standards for NOx, for particulates, and for photochemical oxidants, would not be met by this date in the South Coast Air Basin.

In addition, the California implementation plan included a request

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58. Clean Air Act Amendments, §110, 42 U.S.C. §1857c-5(a)(1) (1970).

59. Pursuant to 42 U.S.C. § 1857c-5(a)(1) (1970) the oxidant standard was promulgated April 28, 1971, 36 Fed. Reg. 8186 (1971).

60. 40 C.F.R. §§52.220 *et seq.* (1976).

61. Transportation controls are defined as measures aimed at reducing individual vehicle miles, single vehicle occupancy, and/or vehicle miles traveled (VMT).

62. 36 Fed. Reg. 15486 (1971). This deferral was later ruled to be beyond EPA's powers.

63. 40 C.F.R. §52.238 (1976).

by the Governor for a two year extension of the compliance date for various requirements of the Act.[64] Los Angeles, the San Francisco Bay Area, Sacramento Valley, and San Joaquin Valley regions were given until May 31, 1977 to meet the standards for photochemical oxidants.[65] EPA also announced that transportation controls for meeting the oxidant standard in Los Angeles were being assessed. These were in addition to the ones California intended to implement. EPA further stated that by February 15, 1973, they would promulgate transportation controls sufficient to meet the oxidant standard in Los Angeles.[66] However, EPA's plan for an orderly sequence of action at their own speed was eschewed by litigation.

On September 6, 1972, *City of Riverside v. Ruckelshaus* was filed by the Center for Law in the Public Interest, a Los Angeles-based public interest law firm.[67] The action, brought under Section 304, cited the Administrator's failure to prepare an implementation plan for California within the six months following his disapproval of the plan as a violation of Section 110(c) of the Act.[68] An injunction was sought to require the Administrator to prepare a plan by January 15, 1973 to meet the national primary air quality standards for oxidant, particulates, and NOx.[69] Section 110(c)(1) of the Act was cited as the basis for making it a non-discretionary duty of the EPA Administrator to:

> promptly prepare and publish proposed regulations setting forth an implementation plan, or portion thereof, for a State if . . .
>
> * * *
>
> (B) the plan, or any portion thereof, submitted for such State is determined by the Administrator not to be in accordance with the requirements of this section,
>
> * * *
>
> The Administrator shall, *within six months after the date required for submission of such plan . . . promulgate any such regulations* unless, prior to such promulgation, such State has adopted a plan . . . which the Administrator determines to be in accordance with the requirements of this section [emphasis supplied].[70]

64. Although § 110(a)(2)(A)(i) requires attainment of the primary standards no later than three years (May 31, 1975) from the approval of the SIP by EPA, the Administrator is authorized to grant a two-year extension under §110(e), 42 U.S.C. §1857c-5(e) (1970).

65. 37 Fed. Reg. 19812 (1972).

66. *Id.* at 19829.

67. City of Riverside v. Ruckelshaus, 4 E.R.C. 1728 (C.D. Cal. 1972). Co-plaintiffs included the City of San Bernardino, the Regional Anti-Pollution Authority, Desert People United, Edward Mehren, and Christopher G. Diebenkorn.

68. 42 U.S.C. §1857c-5(c)(1)(C) (1975 Supp.).

69. Brief for Plaintiff in Riverside, *supra* note 67, at 2.

70. 42 U.S.C. §1857c-5(c) (1975 Supp.).

The petitioner's case was further bolstered by the legislative history of the Clean Air Act and the Report of the Committee on Public Works, which accompanied the 1970 Amendments to the Act. The following quote verifies that Congress intended the Administrator to correct deficiencies in SIPs within six months of the date of initial submittal:

> The bill would provide that the [Administrator] must approve or reject any implementation plan within four months of the date required for its submission. If he rejected the plan or any portion of it he would have to promulgate an alternative plan or portion thereof within an additional two months.[71]

The U.S. District Court for the Central District of California ruled that the Administrator had failed to perform a non-discretionary duty in accordance with the rigid timetable set forth in the Act.[72] The court stated that "[t]he Act requires that the Administrator promulgate regulations to replace any portion of a state plan he disapproves within two months of the date of disapproval. In this case by July 31, 1972."[73] Furthermore, the court specifically rejected the Administrator's attempt to justify his conduct on the basis that he "had already fulfilled many of the responsibilities to which the Complaint was directed and had publicly committed himself to fulfill the balance of those responsibilities by February 15, 1973. . . ."[74] In essence, the court ruled that the Act did not permit the time for further study of the impact and effectiveness of transportation controls.

Was the impact of *Riverside* merely to force EPA to provide a TCP a month earlier than they had planned? After all, EPA had argued in October pretrial hearings that the September 22 announcement obligating them to produce such a plan by February 15, 1973 was grounds for dismissing the case.[75] To us the significance of *Riverside* lies in the circumscription of EPA's option to extend the chore indefinitely, rather than to merely speed up the process somewhat.

Given EPA's past performance with respect to the time frame and the complexity of the oxidant control problem, it is doubtful that EPA's self-imposed deadline would have been met. Indeed, without the threat of litigation, the deadline itself is open to doubt. Of course, one may argue that the nine days which elapsed between the

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71. S. REP. NO. 91-1196, 91st Cong., 2d Sess. 14 (1970).
72. City of Riverside v. Ruckelshaus, 4 E.R.C. 1728, 1731 (C.D. Cal. 1972).
73. *Id.* at 1730.
74. *Id.* at 1729.
75. *Id.*

filing of the petition and the EPA announcement was not sufficient time to produce such a reaction to a threat.[76] Even if we cannot say conclusively that this particular suit provoked the self-imposed deadline, it is undeniable that EPA knew they were in violation of the statutory time frame, and that such litigation was possible.

The task of preparing EPA's plan for Los Angeles was initially given to the Region IX offices of EPA and two analysts were given the major responsibility for its completion.[77] By mid-December they had consulted with many experts within EPA and in the scientific community and had produced a plan which was presented to Mr. Ruckelshaus. Mr. Ruckelshaus reluctantly approved the plan and made a special trip to Los Angeles to announce his approval on January 17, 1973.[78] In announcing the plan, Ruckelshaus noted that the measures he was forced to take resulted "from the failure of the State of California to submit an acceptable plan."[79] He also maintained that it was his policy to "be guided in his final promulgation" of the Los Angeles plan by approvable segments of the transportation control strategy then under consideration by the State.[80]

Even with an extension to 1977 Ruckelshaus maintained that an 87 percent reduction in the projected emissions of reactive HC would be necessary to meet the primary photochemical oxidant standard in Los Angeles.[81] The analysis of the air quality problems in the South Coast Air Basin by EPA had produced disheartening results. It indicated that even if all available measures were taken to reduce reactive HC emissions from motor vehicles and stationary sources, in 1977 the standard for photochemical oxidant would still be exceeded in the basin during the "smog season."[82] Furthermore, motor vehicles would remain the predominant source of reactive HC after the implementation of available measures to reduce mobile and stationary source emissions.[83] Auto emissions levels were clearly a problem and EPA calculations required a reduction in vehicle miles traveled (VMT) of over 80 percent to meet ambient air quality stan-

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76. 37 Fed. Reg. 19812 (1972) was submitted for publication on Sept. 15, 1972.

77. Ronald Mueller and David Souten worked under the direction of Frank Covington, Director of Air and Water Programs, E.P.A., Region IX.

78. The plan was published in 38 Fed. Reg. 2194 (1973).

79. *Id.*

80. *Id.*

81. 38 Fed. Reg. 2195 (1973).

82. Kircher & Armstrong, An Interim Report on Motor Vehicle Emission Estimation (E.P.A. report, 1972); Evaluating Controls to Reduce Motor Vehicle Emissions in Major Metropolitan Areas, Final Report (E.P.A. report, 1972); Prediction of the Effects of Transportation Controls on Air Quality in Major Metropolitan Areas (EPA Report 1972).

83. *See supra* note 81.

dards by 1977. The EPA announcement offered several alternatives to VMT reduction. Apparently these were only "suggestions" since EPA cited gasoline rationing as the only measure which they "considered to be demonstrably effective to achieve compliance with the ambient air quality standards by 1977."[84] Some of these measures did, however, become part of the California TCP.[85]

On January 19, 1973, Robert Fri, Deputy Administrator of EPA, appointed the "Los Angeles Task Force."[86] The Task Force had two primary responsibilities: to conduct the public hearings required by law, and to provide a complete technical evaluation of all aspects of oxidant control in the Los Angeles AQCR. The public hearings, the stated purposes of which were to obtain public comment on the plan and various alternatives suggested in the Federal Register notice and to obtain technical assessments and data, were held at various locations in the region over a three week period in March, 1973. In fact, the public hearings were not a very effective method of accomplishing either of its tasks.[87]

In the process of developing the preliminary plan, and in subsequent public and scientific community reactions, many technical issues were raised. One of the assignments given by the Administrator to the Los Angeles Task Force was to assess and reconcile uncertainties in these technical areas. Five study groups were formed to carry out this assessment: One group addressed the health effects of oxidants and the experimental justification for the national primary standard for oxidants; another group examined the air quality model in order to develop a more accurate relationship between emissions of HC and NOx and expected levels of photochemical oxidants; a third group concentrated upon the current emissions from stationary sources and the control technologies available for their reduction; a fourth group performed a similar inventory and study of available controls for mobile source emissions; the final group concentrated upon the methods of reduction of VMT.[88]

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84. *Id.*

85. *See* 38 Fed. Reg. 31232 (1973).

86. The Los Angeles Task Force consisted of three people from within EPA: Mr. Alan G. Kirk II, Deputy General Counsel; Dr. Joel Horowitz, Systems Analyst, Office of Air and Water Programs; and Dr. Paul Downing, Economist, Office of Research and Development.

87. During the entire set of hearings no new technical information was obtained, nor were any new workable alternatives proposed. The only surprise at the hearings was the position of the Sierra Club. It stated that it would be satisfied with substantial progress rather than strict adherence to the federal oxidant standard. The hearings did serve to demonstrate EPA's concern for public opinion as well as provide a method for formalizing positions.

88. A summary of the results of these reviews can be found in Downing, *supra* note 31.

From the technical review conducted by the Task Force it was clear that estimates of all the critical technical parameters varied widely among analysts. Furthermore, these differences in opinion appeared to derive directly from a lack of empirical observations which could be used to resolve differences: there were no studies available which would show definitively how people, atmospheres, and machines would react to these controls. As a result, the Task Force was left with only a very crude approximation of the effects of alternative policies. And, to make the job of policy formation even more difficult, the estimates kept changing almost from day to day as new and/or different information became available.

An interesting example of such new information is the case of measuring ambient levels of oxidants. A bias in measurements, which can cause substantial differences in control policy, was discovered in 1974. It was determined that the LAAPCD employed a different measurement methodology than that approved by EPA and used throughout the country, although it was originally claimed that the LAAPCD method understated oxidant concentrations and that EPA's method was more accurate. However, upon careful investigation it was found that the LAAPCD method was highly accurate and that the EPA was overstating the oxidant readings. In May, 1975 the CARB acknowledged that fact,[89] stating that the CARB (and EPA) methodology overstated the true oxidant levels and that their measurements should have been multiplied by 0.78 to obtain true measures. On the other hand, the LAAPCD methodology slightly understated true oxidants and its measurements should have been multiplied by 1.04 to obtain true readings. As of June 1, 1975 the LAAPCD method (ultraviolet photometric) was adopted in California.[90]

The effect of this "minor" error on EPA policy can be seen from an examination of Table II. This table shows that in 1977, 22 AQCR's would not meet the federal standard (0.08 ppm) using EPA's measurement technique. However, using the more accurate LAAPCD method, only 10 AQCRs are in violation. Of these, seven are in California and two of the remaining three are very close to the standard under LAAPCD methodology. The remaining area, Houston-Galveston, is a special case of concentrated stationary source emissions. The effect on this measurement error is reduced over time as more AQCR's meet the EPA measured standard. Note

89. Air Resources Board Bull., at 3 (May 1975).

90. California Air Resources Board, A Study of the Effect of Atmospheric Humidity on Analytical Measurement Methods (1975).

that the apparent progress through 1990 demonstrated by the EPA methodology is not evident using the LAAPCD method.

Perhaps the most important point to keep in mind is that all three of the health effect studies employed to set the standard were made using LAAPCD methodology for measuring oxidants. The implication is that EPA is causing many areas of the country to control emissions at greater than necessary expense in order to reduce oxidant levels below a level at which there are no acknowledged health effects, exclusive of radiomimetic effects. This is obviously very wasteful of the country's resources, but, more significantly, it adds political momentum to the anti-control movement.

TABLE II

Oxidant Control and Measurement Errors For 30 Priority I AQCR's

		EPA Measurement	*LAAPCD Measurement*
1977	Exceed Ambient Std*	22	10**
	Meet Ambient Std	8	20
1980	Exceed Ambient Std*	18	10**
	Meet Ambient Std	12	20
1990	Exceed Ambient Std*	12	10**
	Meet Ambient Std	18	20

*Figures assume no additional control measures are adopted.

**Note that 7 of these areas are in California. The remaining three-five are very close to the standard under LAAPCD measurement except Houston-Galveston.

Source: The EPA column is derived from Table III in Memorandum titled Control of Motor Vehicle Related Pollutants Analysis (Internal EPA memorandum from Robert Sanson, Assistant Administrator for Air and Water Programs, Feb. 23, 1973). The LAAPCD column is derived by multiplying predicted oxidant levels by 0.78 to obtain predicted levels employing the LAAPCD measurement technology.

Clearly, precision in technical data is not available. As if to emphasize this point, Uplands (a community east of Los Angeles and in the basin) had a peak hourly reading of 0.62 ppm in August, 1974. This is the same value which was reached in Riverside in 1970. That is, it represents the level against which all progress in control has been measured.

On July 2, 1973, EPA published a revised proposed plan for the Los Angeles AQCR which employed the findings and decisions of the Task Force and the public hearings.[91] On July 15, 1973, the Administrator proposed a California transportation control plan covering

91. 38 Fed. Reg. 17683 (1973).

the remaining AQCRs.[92] Because the necessary technology or alternative control measures was not thought to be available in time for compliance on May 31, 1975, the Administrator granted a two-year extension for photochemical oxidants and CO.

Final regulations establishing the California TCP were promulgated on November 12, 1973.[93] Pursuant to authority provided in Section 110(e) of the Act, the deadline for achieving the standards for photochemical oxidants, NOx, and CO was extended to May 31, 1977 for Los Angeles and several other AQCRs.[94] The final plan included controls on both stationary and mobile sources, some of which were part of the Los Angeles Plan proposed in January 1973.

Since the "final" promulgation of the California TCP on November 12, 1973, significant revisions have occurred in parking management regulations as a result of EPA and congressional action.[95] First, the Administrator deferred all steps in the implementation of the parking surcharge regulations.[96] Second, on January 4, 1974 modifications were made in the method specified for permit review of new parking facilities.[97] Finally, on January 15, 1974, all parking surcharge regulations, including "employee incentive" regulations, were withdrawn and the review of new parking facilities was deferred until January 1, 1975.[98]

On October 15, 1974, the effective date of compliance for the existing parking management regulations was extended from January 1, 1975 to June 30, 1975,[99] as EPA maintained that the extension was necessary to allow the Administrator to consider written comments from the public hearings which had been scheduled for the areas affected by transportation controls. On November 7, 1974, in response to what EPA referred to as "continued public interest in the proposals," the deadline was extended for submission of public comments on the amendments to the parking management regulations.[100] Although comments were to be accepted until November

92. 38 Fed. Reg. 18948 (1973).
93. 38 Fed. Reg. 31232 (1973).
94. *Id.*
95. Congressional action included the Energy Supply and Environmental Coordination Act, 42 U.S.C. § 1857c-10 and the Agriculture-Environmental and Consumer Appropriation Act of 1974, 87 Stat. 468 (codified in scattered sections of 7, 15, 16, 21 U.S.C.). The former sanctioned the Administrator's decision to defer parking management regulations until January 1, 1975. The latter, which appropriated funds for various federal agencies including EPA, prohibited the use of these funds to administer "any program to tax, limit, or otherwise regulate parking facilities." This law expired June 30, 1975.
96. 38 Fed. Reg. 34124 (1973).
97. 39 Fed. Reg. 1025 (1974).
98. 39 Fed. Reg. 1848 (1974).
99. 39 Fed. Reg. 36870 (1974).
100. 39 Fed. Reg. 40040 (1974).

31, 1974, the effective date of compliance remained June 30, 1975. On January 7, 1975, parking management regulations were formally suspended pending the promulgation of new amendments which were to be published within 90 days.[101]

On July 8, 1975, the parking management regulations contained in the transportation control plans for the remaining areas were indefinitely suspended.[102] In explaining their action, EPA maintained that they still supported parking management regulations as a necessary part of an overall transportation control strategy to reduce single occupancy auto travel and to achieve air quality standards.[103] EPA took this position due to amendments which were being considered in Congress, one of which would have required the states to adopt and implement parking controls as part of their SIP. Since EPA would not have been empowered to review parking facilities under this amendment, they felt it desirable to wait for legislative guidance rather than to finalize the amended regulations.[104] This legislative guidance is still forthcoming.

Other controls required in the plan have been only partially implemented, if at all: some bus and car pool lanes have been installed;[105] required control devices for used automobiles have not been installed. Through a succession of revisions and because of its disregard of unrevised provisions, California has not come into compliance with its SIP.

Brown v. EPA

On November 29, 1973, just 17 days after EPA's promulgation of the California TCP, California and a number of other parties petitioned the Ninth Circuit Court of Appeals for review of portions of the Administrator's plan.[106] Briefs were consolidated and the challenges concerning parking regulations were omitted after the suspension of these provisions.[107] The suit dealt primarily with three areas:

101. 40 Fed. Reg. 2585 (1975).

102. Parking management regulations for Fairbanks, Houston, and Boston had been previously suspended by court order.

103. 40 Fed. Reg. 29714 (1975).

104. *Id.*

105. Pacific Legal Foundation v. Burns, Civ. No. 76-1153-WMB (Central Dist., Cal.) set aside the exclusive buslane program on the Santa Monica Freeway. This became known as the "Diamond Lanes" case.

106. *San Francisco Uptown Parking Corp. v. Environmental Protection Agency,* No. 73-3233 (9th Cir. 1973); *see also* related cases Nos. 73-3250 through 73-3530. The EPA brief acknowledged 208 parties. The action was brought pursuant to 42 U.S.C. §1857h-5(b)(1).

107. 42 U.S.C. § 1857c-5(c)(2)(C) (1975 Supp.) authorized EPA "to suspend until January 1, 1975, the effective date or applicability of any regulations for the management of parking supply. . . ." *See supra* note 104.

the constitutionality of the Federal conscription of state resources and officials under the threat of criminal and civil sanctions; the constitutional authority of the Administrator to promulgate certain portions of the California TCP; and the statutory authority of the Administrator to promulgate certain portions of the TCP which were alleged to be "arbitrary, capricious, and not in accordance with the law."[108]

The Government maintained that Congress has the power under the Commerce Clause of the Constitution[109] to: (a) direct a state to exercise its legislative and executive powers and undertake federally assigned duties to control air pollution (action forcing provisions),[110] and (b) compel state officials under threat of injunction or criminal sanction to administer and enforce regulations as promulgated by EPA.[111] Furthermore, the Government contended that such duties may be delegated, even though direct federal regulation of the activities themselves is within the reach of the commerce power. In addition to injunction, EPA cited the equitable powers of the judiciary to fashion the kind of relief appropriate to accomplish the provisions of the California plan.[112] Specifically such powers were cited to include: (a) holding a state official in contempt with substantial daily fines, unless and until he complies with various directives; (b) requiring a state to reallocate funds from one portion of the state budget to another in order to finance required pollution control measures; and (c) placing state or local functions in receivorship.

In addition to *Brown,* three other circuits have challenged the EPA position at the circuit court level and a variety of decisions have emerged.[113] In 1974, Pennsylvania unsuccessfully challenged the constitutionality of the action forcing provisions of the Act.[114] The Third Circuit held that EPA sanctions against Pennsylvania for failure to legislatively implement and enforce federally promulgated TCPs were within the scope of EPA's statutory authority and were a valid

108. California attacked specific provisions of the TCP on the grounds that they would effectively eliminate vehicular traffic in Los Angeles and some measures were chosen although admittedly ineffective. Oxidizing catalyst retrofits were known to cause pollutants themselves, and the validity of the TCP was questioned because EPA had not made maximum use of emission limitations.

109. U.S. CONST. art. I, §8, cl. 3.

110. 42 U.S.C. §1857c-5 (1970).

111. 42 U.S.C. §1857c-8 (1970).

112. Government brief at 49, footnote 13.

113. *See Circuits Split on Whether EPA May Require a State to Adopt and Enforce Clean Air Act Transportation Controls,* 5 ENVT'L L. REP. 10193 (1975).

114. Pennsylvania v. Environmental Protection Agency, 500 F.2d 246 (3rd Cir. 1974).

exercise of the federal commerce power. In 1975, California,[115] Maryland,[116] and the District of Columbia[117] challenged this interpretation as an impingement of state sovereignty. They argued that the Tenth Amendment limited the scope of the commerce power with respect to the exercise of traditional state functions such as state regulation of a transportation system.[118]

Brown rejected the Third Circuit's position and emphasized the serious constitutional questions raised by the Government's argument. The Ninth Circuit in *Brown,* choosing to rule only on statutory grounds, held that the Clean Air Act "permits sanctions against a state that pollutes the air, but not against a state that chooses not to govern polluters as the Administrator directs."[119] However, the court ruled, a state must avoid impeding any enforcement of valid regulations undertaken by the Administrator.

Treating state police power as a form of commerce subject to regulation under the Commerce Clause constitutes a radical departure from previous constitutional practice.[120] Such a construction empowers Congress to orchestrate state regulation of any economic activity that affects interstate commerce in any manner Congress sees fit, and to "reduce the states to puppets of a ventriloquist Congress."[121] Indications of the requisite intent of Congress for this interpretation of the Commerce Clause were cited as not readily available.[122]

Brown's interpretation made it unnecessary to face the issue of whether Congress can prevent a state's withdrawal from a field.[123] The court warned that its constitutional misgivings were not to be interpreted as disfavoring a Congressional determination that the states may regulate certain aspects of commerce which have an effect on interstate commerce only in specified ways, if a state chooses to regulate that aspect of commerce at all.

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115. Brown v. Environmental Protection Agency, 521 F.2d 827 (9th Cir. 1975), *vacated,* 431 U.S. 99 (1977).

116. Maryland v. Environmental Protection Agency, 530 F.2d 215 (4th Cir. 1975), *vacated,* 431 U.S. 99 (1977).

117. District of Columbia v. Train, 521 F.2d 971 (D.C. Cir. 1975).

118. U.S. CONST. amend. X states: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people."

119. Brown v. Environmental Protection Agency, 521 F.2d 827, 832 (9th Cir. 1975), *vacated,* 431 U.S. 99 (1977).

120. *Id.* at 839.

121. *Id.*

122. *Id.*

123. *Id.* at 840.

By June 1, 1976, when the United States Supreme Court granted certiorari to *Brown*, the case included actions from three circuits.[124] The decision in *Brown* was followed by the Fourth Circuit in *Maryland v. EPA* especially in regard to the constitutional analysis,[125] the court finding no authority in the Act for the Administrator to direct a state to enact statutes or regulations. In *District of Columbia v. Train* the court held that the Act did not support the Administrator's regulations insofar as they required the state and local governments to enact statutes.[126] However, it ruled that the question of requiring the states to enforce existing EPA regulations was a different matter. The District of Columbia made a distinction between nonenforcement by a state and violation of a SIP in noting that "violations of an applicable implementation plan" and "a failure of the State in which the plan applies to enforce the plan effectively" are separate concepts. The court classified buses with highways as indirect pollution sources and ruled that EPA could require state legislatures to appropriate money, but it struck down the regulations requiring the state to establish and administer programs for motor vehicle inspection and maintenance and for retrofit of certain classes of vehicles.

On May 2, 1977 the Supreme Court announced that it would not rule on the constitutionality of the action forcing mechanism in the Act,[127] on the grounds that a ruling would amount to an advisory opinion because EPA had admitted that it lacked authority under the Act to force the states to enforce EPA-promulgated TCPs.[128] In the Court's view, the Government had not merely renounced its intent to pursue certain specified regulations, but had also admitted that those remaining in contention were invalid unless modified in certain respects. The issues with which the Court had to deal in *Brown* were narrowed between the time the Court granted certiorari and the time that it heard the case, because the Government had exercised its prerogative to invalidate regulations requiring exclusive bus lanes and gasoline rationing,[129] and gasoline rationing had been challenged, upheld by the Court, and recognized as a valid VMT reduction mea-

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124. *Id.*

125. Maryland v. Environmental Protection Agency, 530 F.2d 215 (4th Cir. 1975), *vacated*, 431 U.S. 99 (1977).

126. District of Columbia v. Train, 521 F.2d 971 (D.C. Cir. 1975).

127. Environmental Protection Agency v. Brown, 431 U.S. 99 (1977).

128. *Id.* at 103.

129. Bus lane requirements applicable to Maryland and the District of Columbia were rescinded by 42 Fed. Reg. 7957 (1977).

sure.[130] In addition, in October, 1976, EPA had rescinded all regulations concerning gasoline rationing.[131]

"The Administrator . . . concedes the necessity of removing from the regulations all requirements that the States submit legally adopted regulations; the [Administrator's] regulations contain no requirement that the State adopt laws."[132] The Justices agreed with the states that the Court could rule only on the regulations for which it had originally granted certiorari, stating that "for [the Court] to review regulations not yet promulgated . . . would be wholly novel."[133] The Court vacated the judgments and remanded the cases to the lower court to consider whether EPA action had made the issues moot.

In dissent, Justice John Paul Stevens stated: "The action the court takes today is just as puzzling as the federal parties' position. Unless and until the EPA rescinds the regulations in dispute, it is perfectly clear that the litigation is not moot."[134] Stevens maintained that if the Court were satisfied that EPA intended to modify the regulations regardless of the outcome of the case, the proper course of judicial action would be to dismiss the writ of certiorari as improvidently granted. But, "if the survival of the regulations is dependent on our disposition of these cases," Stevens said, " we should address the merits and resolve the issues which have been fully briefed and argued."[135] By vacating the judgment, the Court gave the Government a partial victory as a reward for an apparent concession that its position is not supported by the statute.

By implication, *Brown* amounts to a legislative remand for Congress to correct the deficiencies in the Act. By this we mean, the question of obtaining state enforcement of the Act has been tossed into the hands of Congress. By all indications *Brown* should have produced a decisional milestone in shaping our system of federalism. In point of fact it has accomplished nothing; as it stands now air pollution control is a "local option" at the federal district court level.

Although EPA is prevented from undertaking enforcement action against the State of California as an "indirect source" a number of

130. City of Santa Rosa v. Environmental Protection Agency, 534 F.2d 150 (9th Cir. 1976), *vacated* (and remanded as to question of mootness) *sub nom.* Pacific Legal Foundation v. Environmental Protection Agency, 429 U.S. 990 (1976).

131. 42 Fed. Reg. 45565 (1976).

132. Environmental Protection Agency v. Brown, 431 U.S. 99 (1977).

133. *Id.* at 104.

134. *Id.*

135. *Id.*

federal enforcement actions are pending against individual polluters.[136] Essentially EPA has two, at most three, viable options. First, direct federal administration and enforcement on a case-by-case basis of transportation controls at the state and local level is possible. This would, however, require vast increases in federal personnel, expenditures, and an intrusion into state and local affairs.[137] Second, EPA could seek to legitimize their position on the use of penalties by encouraging Congress to amend the Act in this way. Even if the Act was amended to force the states to adopt and enforce transportation controls under threat of Section 113 penalties, it is unlikely that the Ninth Circuit or Fourth Circuit would find this constitutional. A third alternative might be called "exemplary enforcement." This approach, which is consistent with past EPA bargaining strategy and operative resource constraints, would entail the selection of prominent cases or blatant violators as examples.

The interface of the federal regulation of interstate commerce and the Tenth Amendment has been the subject of tortuous evolution. The constitutional issues involved in *Brown* are unlike those in *U.S. v. California, Maryland v. Wirtz,* and *Fry v. U.S.*, which formed the basis of the EPA argument in *Brown.*[138] While these cases question the validity of federal power to regulate a state activity that could be

136. The District of Columbia took a middle of the road position. Like the Ninth and Fourth Circuits, the D.C. Circuit held that EPA lacked the authority to order "states and municipalities to enact statutes, regulations, or to take other actions . . . to complete the regulatory scheme." District of Columbia v. Train, 521 F.2d 971, 986 (D.C. Cir. 1975). Furthermore, the court stated that "[c]ongress placed these duties on the Administrator, not the states when the states' submitted plans are found to be insufficient." *Id.* However, the D.C. Circuit stopped short of the position of the Ninth and Fourth Circuits by finding that EPA had statutory authority to compel states to administer EPA promulgated programs directed to a "traditional state function." In the D.C. Circuit, the operation of a state transportation system was held subject to regulation as an "indirect source" and a state may be required to purchase buses and construct exclusive bus lanes.

137. *See* Downing, *supra* note 31.

138. In United States v. California, 297 U.S. 175 (1936), the Supreme Court held that whether the state owned railroad was operated in a "sovereign" rather than "private" capacity was irrelevant. Focusing instead on the activity rather than the actor, the Court maintained that the relevant question was whether the form of federal regulation was a valid exercise of the commerce power. In Maryland v. Wirtz, 392 U.S. 183 (1968), this rationale was applied to Maryland's attack on the extension of the federal minimum wage law to state schools and hospital employees. The Court ruled that federal commerce power could override countervailing state interests because labor conditions in state institutions had the requisite effect on interstate commerce. Although acknowledging that inherent limitations in the Commerce Clause empowered the Court to prevent the destruction of states as sovereign political entities, *Wirtz* implied that state sovereignty no longer imposed any limit on the congressional authority to regulate commerce. In Fry v. United States, 421 U.S. 542 (1975), the Court upheld a federal injunction preventing Ohio from raising state employee wages in violation of the seven percent ceiling imposed by the President acting pursuant to the Economic Stabilization Act. Responding to the petitioners' argument that the injunc-

federally regulated if conducted privately by individuals, *Brown* involves the fundamentally different question of whether the Commerce Clause empowers Congress to compel a state to regulate its own citizens.

The Commerce Clause as developed through interpretative case law permits Congress to address a host of activities having some "effect" on commerce, although not constituting "commerce" in themselves.[139] *Brown* conceded that pollution affects interstate commerce and that Section 110 empowers the Administrator to promulgate pollution control plans and to enforce the plans against individual polluters, including states.[140] However, the *Brown* court argued that the Tenth Amendment and the Guarantee Clause[141] implicitly prevent the Administrator from compelling the states to exercise their legislative and administrative powers to administer the federal plan.[142]

The Ninth Circuit distinguished between an economic activity affecting commerce, conceded to be subject to federal regulation, and a state's exercise of its police power with respect to such an activity.[143] The exercise of state police power over transportation was held to not be subject to federal regulation. While particular state actions governing commerce may be invalidated under the supremacy clause when in conflict with federal law, the court held that the fact that a state must yield to federal policy power over commerce does not make state police power itself an act of commerce which is subject to regulation under the commerce clause. Therefore, the Government's argument that all unexercised state power was within the plenary reach of the federal commerce power was refuted by the Ninth Circuit. Such an interpretation was ruled invalid because it would fundamentally alter the existing federal-state relationship by severing spending from taxing at the state level.[144]

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tion violated the Tenth Amendment, the Court stated that the Economic Stabilization Act was less of an intrusion upon state sovereignty than the minimum wage law upheld in *Wirtz*. The Court acknowledged that the Tenth Amendment argument was not without substance and that it reflected constitutional policy that Congress may not exercise power in a fashion that drastically impairs a state's ability to function in a federal system.

139. *See* Wickard v. Filburn, 317 U.S. 111 (1942); Heart of Atlanta Motel, Inc. v. United States, 379 U.S. 241 (1964); Katzenbach v. McClung, 379 U.S. 294 (1964).

140. Brown v. Environmental Protection Agency, 521 F.2d 827, 834 (9th Cir. 1975), *vacated*, 431 U.S. 99 (1977).

141. U.S. CONST. art. IV, § 4 obligates the U.S. to guarantee every state a Republican Form of Government.

142. Brown v. Environmental Protection Agency, 521 F.2d 827, 838 (9th Cir. 1975), *vacated*, 431 U.S. 99 (1977).

143. *Id.*

144. *Id.* at 839.

To say that something is "unconstitutional" can have a number of meanings. It might mean that one is trying to count the votes which would be cast by a particular Supreme Court. We shall call this interpretation Type I constitutionality. It might also refer to considerations presumed to be internalized in congressional deliberations pertaining to a particular piece of legislation. We shall refer to this as Type II. With respect to the latter, Congress faces a different problem than that of the courts. The courts, when looking at a law, give an initial presumption of Type II constitutionality, which follows from the assumption that Congress acts constitutionally. In resolving conflicts arising in the administration of federal law, courts look to the legislative history as the basis for determining congressional intent. In cases where the intent is not clear the court then relies on interpretative case law. It is here, of course, that Type I becomes important in judicial scrutiny.

We believe that the Clean Air Act is not constitutional under either a Type I or Type II constitutionality analysis. Given the narrowing of Federal power under the Interstate Commerce Clause in *National League of Cities v. Usery*,[145] *Brown* apparently could be upheld on Type I grounds. *National League of Cities v. Usery* was heralded as the first case in 40 years in which the Supreme Court failed to sustain a claim of Congressional power under the Commerce Clause, the Court ruling that Congress cannot tell the states and cities how much they can pay their employees.[146] The Supreme Court's ruling in *Usery* reversed both *Fry* and *Wirtz*, cited above, and therefore destroyed the underpinning of the EPA argument in *Brown*.

In the majority opinion, Justice Rehnquist stated that the extension of the Fair Labor Standard Act coverage was an impermissible interference with the essential functions of states and that little would be left of the states' "separate and independent existence" if Congress withdrew from the states the authority to make fundamental employment decisions.[147] Although conceding that Congress had the power to regulate commerce, Justice Rehnquist construed the power narrowly where it conflicts with state sovereignty. Furthermore, he added "Congress may not exercise that [commerce] power so as to force directly upon the states its choices as to how essential decisions regarding the conduct of integral governmental functions are to be made."[148]

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145. 426 U.S. 833 (1976).
146. *Court Limits Congress' Power Over States*, 34 CONG. Q. 1723 (1976).
147. National League of Cities v. Usery, 426 U.S. 833, 851 (1976).
148. *Id.* at 855.

There is a substantial likelihood that the Clean Air Act does not satisfy the Type II constitutionality analysis. Aside from the recognition in both *Brown* and *Maryland*[149] concerning the lack of evidence of legislative intent, the Attorney General has expressed serious misgivings concerning the constitutionality of the Act. In testimony before the Senate Commerce Committee on no-fault insurance, Attorney General Edward H. Levi expressed his doubts concerning the permissibility of the congressional intrusion upon state sovereignty in making "(s)tate agencies and employees . . . perform as though they were Federal instruments or employees or as though the Federal Congress were the state legislature and the possessor of the State's sovereignty."[150] Levi maintained that his misgivings could be remedied by legislation creating a financial incentive program which would allow the states to "opt-out" of enforcement duties. "Opting-out" would, however, carry with it the loss of federal tying grants and federal preemption of enforcement in the state. After all, the use of criminal sanctions is not the usual way of obtaining state and local governmental participation in the implementation of national policy. The consent of governmental units is generally obtained with federal grants to perform specific functions.

Let us briefly consider the advantages of legislation to establish the financial incentive approach advocated by the Attorney General. First, this would require a determination by Congress that the power of the states to regulate certain aspects of commerce with perceived impacts on interstate commerce is limited. Second, it would require a delineation of the types of participation available to the states. In so doing it would also specify permissible federal intervention. Fourth, "opting-out" would permit the state to choose whether to regulate specific aspects of commerce. Finally, this would legitimize the approach by a majority rule collective decision. Legislative history, especially on the heated debate which would surely result, would provide a basis for judicial scrutiny. In short this decision-making approach has much to recommend it in the hard decisions which will be faced in environmental regulation.

Where Are We Now?

Since the promulgation of the SIP and the *Brown* case, EPA and

149. *See* Brown v. Environmental Protection Agency, 521 F.2d 827 (9th Cir. 1975), *vacated,* 431 U.S. 99 (1977); Maryland v. Environmental Protection Agency, 530 F.2d 215 (4th Cir. 1975), *vacated,* 431 U.S. 99 (1977).

150. Hearings on S. 354 Before the Senate Commerce Comm., 94th Cong., 1st Sess. 504 (1975).

CARB have remained active in controlling oxidants in Los Angeles. After the election of Governor Brown, California's attitude toward air pollution control changed. The new CARP includes Mary Nichols, the lawyer who brought the *Riverside* case. Controlling air pollution has become a high priority so that the CARB has voluntarily adopted many provisions of the SIP.[151]

A. Vapor recovery at gasoline stations

This requirement has been adopted by the CARB. Phase I, the recovery of gasoline vapors while filling underground tanks at gasoline stations has been fully implemented. Phase II, the recovery of gasoline vapors from automobile gas tanks while filling is in process. Two nozzles are expected to be certified in the near future. Status: being implemented by CARB.

B. Dry Cleaning solvents

This provision has been adopted by CARB. Status: fully implemented by CARB.

C. Degreasing solvents

CARB adopted a more stringent requirement. It is also considering further restrictions for this source. Status: fully implemented by CARB.

D. Vehicle miles traveled restrictions

Parking controls and surcharges were rescinded by EPA.[152] Status: Unimplemented. Exclusive bus lanes have been adopted by Caltrans. However, only one system has been implemented, that on the San Bernardino freeway. "Diamond Lanes," which are restricted to carpools and buses, were placed in operation by Caltrans on the 12.5 mile section between Santa Monica and the Harbor Freeway near downtown Los Angeles in March of 1976. On August 9, 1976, U.S. District Judge Matt Byrne enjoined Caltrans from operating the Diamond Lanes until the state agency complies with provisions of the California Environmental Quality Act and the National Environmental Policy Act.[153] Presumably, after the Environmental Impact Report (EIR) has been filed the Diamond Lanes will be imple-

151. This status report was obtained in a telephone interview with Ron Mueller, Region IX, EPA (Dec. 13, 1976).

152. *See* notes 100, 101 and 103.

153. L.A. Times, Aug. 10, 1976, at 1, col. 1.

mented. However, Donald Burns, secretary of the state Business and Transportation Agency within which Caltrans functions, stated that "[t]he judge's order, as we understand it, is not hospitable to the continued operation of the project."[154] However, there is substantial political opposition to the program. The *Los Angeles Times* has been a particularly vocal opponent. Status: Unimplemented and future status uncertain. Other transportation controls have not been forthcoming; there are no active carpooling programs; very few additional buses have been purchased and mass transit is not being seriously considered. Status: Unimplemented.

E. Catalyst retrofit

CARB refused to adopt this program and EPA is ignoring it. Status: Unimplemented.

F. NOx retrofits

CARB adopted a modified and less ambitious program for retrofitting 1966-1970 model year cars. Instead of being implemented within one year this program has been strung out by requiring the installation of NOx retrofits only at change of ownership. The similar requirement for 1955-1965 model year cars is being ignored by CARB and EPA.

The 1966-1970 automobile NOx retrofit program provides a case study of the problems which may arise in EPA delegation of enforcement authority. The NOx Program began in November, 1971 with an amendment to the Air Resources Act which required that the California Air Resources Board set standards for devices to reduce emissions of NOx from the exhaust of 1966-1970 automobiles.[155] The Air Resources Board was empowered to (1) accredit such devices, (2) require certificates of compliance upon initial registration and transfer of ownership of 1966-1970 vehicles and all vehicles upon renewal for the year 1973, and (3) grant limited authority to delay the requirements for certificates of compliance for all automobiles by 1973, for extraordinary or compelling reasons only.

On or about September 17, 1972, the Air Resources Board passed on an emergency resolution[156] to defer the 1973 registration requirement. The basis for this action was an alleged insufficiency of both the devices and mechanics to install them in time to provide a certificate of compliance for the 1973 registration.

On November 21, 1972, the Air Resources Board adopted a

154. *Id.*
155. CAL. HEALTH & SAFETY CODE §39107.6 (West 1973).
156. Resolution No. 72-111.

resolution[157] containing a schedule for installation of NOx devices. The schedule provided that upon transfer of ownership and upon initial registration, certificates of compliance would be required in:

1. Riverside County by February 1, 1973;
2. Los Angeles, San Bernardino, Orange, Ventura, and Santa Barbara Counties by April 1, 1973;
3. San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Marin, Sonoma, Napa, and Solano Counties by June 1, 1973.

The resolution further provided that beginning July 1, 1973 all 1966-1970 vehicles would be required to install the device in accordance with a schedule based on license plate numbers.

In June, 1973, the Air Resources Board repealed the installation schedule on the basis of suspicions of valve damage under certain conditions. On September 24, 1973, the Air Resources Board by emergency regulation adopted an installation schedule providing, among other things, that 1966-1970 vehicles would be required to have NOx devices installed on or before December 1, 1974.[158]

On November 16, 1973, Governor Reagan sent a letter to Dr. A. J. Haagen-Smit, Chairman of the Air Resources Board, requesting the Board to reconsider the new installation schedule because of the energy shortage and the increased gasoline consumption which they would cause. By the December 19, 1973 meeting, at which the delay was sanctioned,[159] three members had left the Air Resources Board: Dr. Haagen-Smit had retired, Robert G. Brattain had resigned, and Gladys Meade had been fired. Meade's firing generated considerable media coverage with strong innuendos that the Air Resources Board, as previously constituted, would have voted against the delay.[160]

At its January 7, 1974 meeting, the Clean Air Constituency unanimously agreed to become a co-plaintiff in a lawsuit against the California Air Resources Board.[161] A summary of the legal position

157. Resolution No. 72-111B.

158. Resolution No. 73-27F.

159. Resolution No. 73-276.

160. Fisher, *Fired Member Asks Air Panel to Proceed with Car Smog Plan*, L.A. Times, Dec. 20, 1973, at 3, col. 1. Meade received television coverage at her appearances before CARB.

161. In October, 1972, the Clean Air Constituency operating under the auspices of the California Lung Association of Oakland was awarded EPA Grant No. 900368. This grant, which amounted to $34,147, was for a study of "The Impact of the State Implementation Plan on the Citizens of California." For the period Sept. 1973 through Sept. 1974 Clean Air Constituency received EPA Contract No. 68-01-1584. Although Clean Air Constituency was hired to perform various studies and informational programs for EPA, our assessment is that they acted as public relations agents for EPA. *See* G. Grady, The Institutionalization of Citizen Participation in the Clean Air Act (unpublished manuscript in Va. Polytechnic Inst. & St. U. Lib.).

advanced by Clean Air Constituency in the lawsuit is provided below:[162]

> That the resolution of December 18, 1973, by which the Air Resources Board delayed implementation of the NOx emission device program for one year is invalid because
>
> 1. The Air Resources Board has no legal authority to base any decision on the energy shortage under the legislation that created the NOx emission device program.
> 2. The resolution is an abuse of discretion, in that it is inconsistent with standards prescribed by the law and not reasonably necessary to effectuate the purpose of the NOx legislation.
> 3. The Air Resources Board has a duty to implement the NOx device program as rapidly as possible.
> 4. That if the Court determines that the Legislature *did* attempt to give the Air Resources Board authority to delay the program for reasons unrelated to the effectiveness of the program, then this was an unconstitutional delegation of legislative power of Article XXVI, Section 3 of the California Constitution.
> 5. The resolution was not promulgated in accordance with the procedures required by the California Administrative Act because no notice was given 30 days in advance and the Air Resources Board took no evidence and made no findings of any facts constituting an emergency.
> 6. The action of the Air Resources Board in delaying the program was arbitrary, capricious, and lacking evidentiary support.

The form taken by Clean Air Constituency's complaint represents a response to both economic and institutional factors. Dana and Echlin, manufacturers of NOx retrofit devices, had received the approval of the California Air Resources Board to sell their devices in the state program. Failure to implement the program caused Dana and Echlin to suffer economic harm through investment of $9.0 million and $4.7 million, respectively, in the development and warehousing of the NOx device. The State Attorney General argued that since Dana was incorporated in Virginia and Echlin in Connecticut, they lacked legal standing to bring suit in California.[163] The inability to gain access to the courts, of course, had the effect of increasing the probability that the two firms would sustain economic damage from delays in the NOx program. Although with legal standing in doubt, indications were provided before the delay that a manu-

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162. Clean Air Constituency v. California State Air Resources Bd., 11 Cal.3d 801, 523 P.2d 617 (1974).

163. Oliver, *Smog Device Delay for Older Cars Challenged in High Court*, L.A. Times, June 14, 1974, at 3, col. 2.

facturer was "seriously considering a lawsuit against the Air Resources Board and the state to force adherence to the plan."[164]

Clean Air Constituency was approached by one manufacturer about the possibility of becoming co-plaintiff in such a suit,[165] which offered to pay all legal fees, amounting to about $10,000.[166] While Dane and Echlin were represented by private law firms,[167] Clean Air Constituency and Meade were represented by Mary Nichols of the Center for Law in the Public Interest.[168] One may only conjecture about the extent to which Clean Air Constituency's proprietary interest in the NOx program both as environmentalists and EPA contractor and the recent controversy surrounding Meade's removal were controlling factors in their installation as plaintiffs.

Although the brief filed by the petitioners is consolidated and does not, therefore, specify the input of the individual lawyers, media coverage may be used to separate the arguments advanced by each. The lawyers for Dana and Echlin argued their substantial investment in the program gave them a "right to sue to protect their interest."[169] On the other hand, Mary Nichols, representing the environmentalists, argued that the delay had damaged the health of "all persons who breathe in this state" by the unnecessary release of at least 100 tons of NOx per day. Consequently, the petitioners requested a writ of mandamus to compel the correction of abuses of discretion by administrative officers, and performance by an agency of an act required by law to be performed.[170]

One cannot, of course, say how the ultimate form taken by the petition may have been altered by the installation of Clean Air Constituency and Meade in Dana and Echlin's case. However, the case was probably bolstered by the two co-plaintiffs and the reputation of the Center for Law in the Public Interest in environmental and public interest concerns. Since the case was brought in the state courts

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164. Fisher, *Year's Delay Likely for Smog Device on 1966-70 Autos,* L.A. Times, Dec. 19, 1973, at 1, col. 1.

165. Interviews with Mary Nichols (April 4, 1975) and Gladys Meade (April 7, 1975).

166. Interview with Mary Nichols, *supra* note 165.

167. For Dana: Paul, Hastins, Janofsky and Walker, Los Angeles; for Echlin: Munger, Tolles, Hills and Rickershauser, Los Angeles.

168. Mary Nichols prepared the case in City of Riverside v. Ruckelshaus, 4 E.R.C. 1728 (C.D. Cal. 1972) which ultimately led to EPA's promulgation of 82% gas rationing. Center for Law in the Public Interest has a close relationship to Clean Air Constituency. Not only is it a member of Clean Air Constituency, but also Clean Air Constituency members are found on its board of trustees: Gladys Meade and Larry E. Moss, President of Sierra Club (Angeles Chapter).

169. *See supra* note 165. Statement attributed to Dennis Vaughn, counsel for Dana.

170. Brief for Plaintiff, Clean Air Constituency v. California State Air Resources Bd., 11 Cal.3d 801, 523 P.2d 617 (1974).

where standing has historically not been a problem, and given the federal court's recognition of "non-economic injury" as grounds for standing in *Scenic Hudson,*[171] and the "zone of interest" in *Data Processing,*[172] it may be posited that the economic hardship suffered by Dana and Echlin may not have been signifcant factors in getting Clean Air Constituency's case into court. For this reason, it appears to the authors that the merger of grievances was intended to increase the probability of a favorable outcome for the private plaintiff.

In denying the plaintiff's argument for reinstating the 1974 deadlines for installing the devices, Los Angeles Superior Judge, David N. Eagleson, said the Legislature had given the Board authority "to take cognizance of facts in the real world."[173] Referring to the smog-control devices as a "victim" of the "energy crisis," he ruled that the Air Resources Board had the authority to order the delay without legislative consent.[174]

The Center for Law in the Public Interest chose to file a petition for writ of mandamus in the California Supreme Court, rather than to proceed with the normal, lengthy appellate process. On June 17, 1974, the California Supreme Court invalidated the delay and ruled that the Air Resources Board has exceeded its constitutional powers and had "improperly weighed the need to conserve fuel against the need for clean air." Subsequently, the NOx retrofit program was brought up for reconsideration in the California state legislature. Portions of the program were repealed.[175]

The 1966-1970 NOx retrofit program is currently enforced throughout California either at change of ownership or at the initial registration of a vehicle in California. In 1974 the so-called "license plate" installation schedule was repealed outside the six South Coast Air Basin counties (Santa Barbara, Ventura, Orange, San Bernardino, Riverside, and Los Angeles).[176] The repeal of the mandatory instal-

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171. Scenic Hudson Preservation Conference v. Federal Power Comm'n, 354 F.2d 608 (1965), *cert. denied sub nom.* Consolidated Edison Co. v. Scenic Hudson Preservation Conference, 384 U.S. 941 (1966).

172. Association of Data Processing Serv. Organizations, Inc. v. Camp, 397 U.S. 150 (1970).

173. *See supra* note 167.

174. Case Docket, Center for Law in the Public Interest, Los Angeles, A-10 (Dec. 1974).

175. The state air pollution law was subsequently recodified, so there is no current citation. Letter from Mary D. Nichols, Vice Chairman, CARB, to Gordon L. Brady (May 7, 1976).

176. CAL. HEALTH & SAFETY CODE § 39177.1 (West Supp. 1974) (as amended by 1974 Cal. Stats. ch. 670) (repealed 1975).

lation schedule in the six counties enumerated above took effect in 1975.[177]

EPA is not requiring the installation of NOx retrofit control devices on used automobiles. The official position is that although a few AQCRs will not met the NO_2 standard, NOx retrofit programs are not considered a reasonably available strategy for light-duty vehicles. EPA has accepted CARB generated light-duty vehicle noncatalytic retrofit regulations. Status: partly implemented by CARB for 1966-1970 automobiles, unimplemented for 1955-1965 automobiles.

G. Inspection and Maintenance

The SIP required mandatory annual inspection of automobiles employing a loaded dynamometer test. CARB instituted a voluntary test in Riverside and it has plans to implement a mandatory annual idle inspection program in the future. However, the status of the idle inspection program changes rapidly and there is a good chance it will be delayed or scrapped in the future. Status: CARB in process of implementing less stringent program.

H. Motorcycle registration restriction

Neither CARB or EPA takes this provision seriously. Status: Unimplemented.

I. Gas Rationing

Rescinded by EPA.[178] This means that technically EPA is in violation of the requirements of the 1970 Amendments because the currently promulgated SIP does not demonstrate attainment of the ambient standard even on paper. Status: Unimplemented.

Conclusion

The Clean Air Act of 1970 has not been fully implemented in Los Angeles. Prior to passage of the 1977 Amendments EPA was in violation of both the Act and the court ruling in *Riverside*. Since *Brown* has been remanded, EPA will be responsible for enforcing those provisions which have not been implemented voluntarily by CARB. But EPA apparently has never intended and does not intend in the future

177. 1975 Cal. Stats. ch. 40 (repealing CAL. HEALTH & SAFETY CODE § 39177.1) (West Supp. 1974).

178. 41 Fed. Reg. 45565 (1976).

to enforce the letter of the Act. The ambient oxidant standard was not met in 1977; the Clean Air Act failed.

It is not our intention to argue that no progress has been made in the effort to control air pollution. The CARB has moved forward with controls. How much of this progress is attributable to EPA pressure and how much to the change of political climate in California cannot be said with certainty. However, Mary Nichols, a CARB member, suggests that the major responsibility for progress lies with CARB and Governor Brown.[179]

THE CLEAN AIR ACT OF 1977

In recognition of the technical problems encountered in meeting ambient standards by 1977, Congress initiated efforts to amend the Act. After lengthy debate in the committees of both houses, a conference version, S. 3219, The Clean Air Act Amendments of 1976, was adopted and presented to both houses for action.[180] The bill was killed by a filibuster led by Utah's two senators Jake Garn and Frank Moss in the final day before adjournment of the 94th Congress.[181]

The amending process began anew in the 95th Congress and the Clean Air Act of 1977 was passed in August as Public Law 95-95.[182] This time, similar threats of filibuster by Senators Garn and Ted Stevens (Alaska) were settled by compromise. Yet, as we show below, little has been accomplished by the 1977 amendments to correct the underlying philosophical flaws in the 1970 Act. It would seem that Congress should be aware of the technocratic and constitutional problems in the 1970 Act which we have discussed. Therefore, we expected to find that the 1977 Amendments would solve these problems. Instead, we find that Public Law 95-95 does not solve these basic problems.

The Clean Air Act of 1977 requires states to produce a SIP which demonstrates attainment with ambient air quality standards by December 31, 1982.[183] A Governor may obtain a 5 year delay in attaining the primary air quality standards for CO and photochemical oxidants.[184] In areas with severe CO and oxidant problems, EPA can approve a 5 year delay to 1987, if by 1979 the state has submitted a

179. Interview with Mary D. Nichols, CARB, in Los Angeles (Dec. 2, 1975).
180. S. REP. NO. 717, 94th Cong., 1st Sess. (1976).
181. Wall St. J., Oct. 4, 1976.
182. Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685.
183. *Id.* §172(a)(2), 91 Stat. 746 (to be codified at 42 U.S.C. §7502(a)(2)).
184. *Id.*

revised SIP to EPA that requires the implementation of all reasonably available control measures.[185] The revised SIP must list the measures that may not be reasonably available, but would lead to the attainment of the standards by December 31, 1987. A state need not commit itself in 1979 to implement these measures. By July 1, 1982, however, a state unable to meet the oxidant or CO standards by 1987, must submit a second plan revision. It must require implementation of the "enforceable" measures which are necessary to attain the standards by 1987.[186]

If in 1979 a state demonstrates to EPA's satisfaction that the state cannot meet the standards by 1982, the revised plan must contain provisions for:[187] 1. alternative site analysis for major emitting facilities seeking locations; 2. a schedule for a vehicle inspection and maintenance program; and 3. funding for mass transit. After 1979, the state must have an approved plan revision in order to grant new construction in nonattainment areas.[188] Permit conditions for new sources must specify the lowest achievable emission rate which is actually, not theoretically, possible.[189] If the cost of a given control strategy is so great that the source could not be built, the measure would be considered unachievable and could not be required by the Administrator. Also, a state whose problem involves automobile related pollutants may adopt California motor vehicle emission standards. EPA and Congress will let the state off the 1982 hook if it promises to adopt enforceable measures needed to attain the standards for CO and oxidant by 1987. This plan must meet the standard or make a good argument why it will not be met by 1982.

Note that the technocratic philosophy is retained under this approach, and there is no reason to expect better technical assessments in the future because the incentive to develop more accurate information has not changed. The Administrator will have to make judgments on which transportation controls are "reasonably available" and which do not have "serious adverse social and economic im-

185. *Id.* § 172(b)(2), 91 Stat. 747 (to be codified at 42 U.S.C. § 7502(b)(2)). Prior to 1979 in order for a state to approve new construction in nonattainment areas it must adopt either EPA's emission "offset" policy or follow a waiver procedure. The "offset" policy requires additional emissions from a new or expanded source to be more than offset by reductions in existing facilities within the region. *See Emission Offsets: EPA Rules Clean Air Act Allows New Sources in Nonattainment Areas,* 7 ENVT'L L. REP. 10029 (1977); *Train Sets Environmental Rules for Growth in Nonattainment Areas,* 7 ENVIR. REP. (BNA) 1219 (1976).

186. Pub. L. No. 95-95, § 172(c), 91 Stat. 748 (to be codified at 42 U.S.C. § 7502(c)).

187. *Id.* §172(b)(11), 91 Stat. 747 (to be codified at 42 U.S.C. §7502(b)(11)).

188. *Id.* §173(1)(A), 91 Stat. 748 (to be codified at 42 U.S.C. §7503(1)(A)).

189. *Id.* §173(2), 91 Stat. 748 (to be codified at 42 U.S.C. §7503(2)).

pacts."[190] This provision is undoubtedly due for much debate and litigation and it puts EPA in the same position they found themselves in when initially producing the transportation controls in the SIP. Does the development of bus and carpool lanes meet this criteria? What about annual operation and maintenance inspections? It would seem that parking space controls would fit these criteria, yet they have already been rejected by EPA.[191]

One can only speculate on how this provision will be implemented. However, it seems to us that EPA will have to adopt a position of cooperative negotiation which will depend critically upon the bargaining power of each side. Since EPA's position will be weak the negotiations will probably lead to interim transportation controls which, like the current efforts at implementing the SIP, are dependent upon voluntary adoption by the relevant state and local agencies.

EPA's bargaining position is weak due to its limited opportunity set of enforcement alternatives. The 1977 Act does nothing to change the basic enforcement tool, federal preemption.[192] Like its predecessor, the Act provides for federal action whenever a state fails, even though the threat of federal intervention did not yield the desired result in the 1970 Act. There is little reason to believe that the future will be substantially different.

The one ray of hope is the provision that other federal agencies cannot support or fund transportation projects which are in conflict with an EPA approved transportation plan.[193] The effectiveness of even this provision, however, is unclear. It seems to imply that new roads could not be built with federal funds if they conflict with the plan, yet old roads could probably be maintained and improved. For this reason, local governments probably would not face complete loss of federal funds; only a reduction in new construction money. And in order to sustain this reduction, EPA would have to demonstrate that the project would have serious adverse effects on air quality which would again raise the problem of technical assessments and inaccurate and uncertain data. An added impairment to the effectiveness of the provision comes from within the federal system, in that

190. *See* Friends of the Earth v. Environmental Protection Agency, 499 F.2d 1118, 1127 (2d Cir. 1974) for the judicial interpretation of "reasonably available alternative" and "socially and economically disruptive."

191. *See supra* note 103.

192. Federal pre-emption is provided in several sections. *See, e.g.*, Pub. L. No. 95-95, §108(d)(3), 91 Stat. 695 (amending §110(c) of the 1970 Act) (to be codified at 42 U.S.C. §7410(c)(3)).

193. *See* the discussion *supra* at 241-45.

other federal agencies have their own missions and will fight EPA efforts to scuttle their programs.[194] Accordingly, we believe that the provision will be rendered ineffective, by both state action and federal agency action.

The constitutionality issue has not been resolved either. The Supreme Court did not want a head on confrontation with it and the Ninth Circuit will wait until EPA rescinds regulations requiring states to legislate before they once address the issues.[195] While EPA may delegate enforcement authority to state or local governmental units, the provision does not require the units to accept. And since EPA has no way to entice them except with the negative inducement of withholding EPA funding, EPA will have to rely on local aversion to federal intervention to promote local action. Again, this type of incentive has not worked well in the past.

Two additional provisions in the 1977 Act are worthy of note. Recall that the health effects studies for photochemical oxidants were misinterpreted. The new Act requires that the Administrator complete a thorough review of the criteria by December 31, 1980 and every five years thereafter.[196] Also an independent scientific committee is to be empaneled to review the health studies. However, EPA is not required by statute to re-promulgate the standard. If it finds that, in the Administrator's opinion, the current standard is justified, the standard cannot be challenged. This "new" provision represents a more complex version of the provision in the 1970 Act which stated that: "The Administrator shall from time to time review, and, as appropriate, modify, and reissue criteria . . ."[197] Discovery of an error and modification of a criteria have not lead to change in the standard in the past; there is no reason to believe EPA will be motivated to act differently in the future.

Perhaps the most significant provision in the 1977 Act is the noncompliance penalty. Section 113 was amended to allow a state or EPA to extend the date of compliance with new or existing source emission limitations for major stationary sources.[198] This extension can be obtained only if a source agrees to pay a penalty for failing to comply by the date agreed upon by the source and the state, or by

194. The problems of interagency cooperation on environmental issues are well known. *See, e.g.*, Manko, *Environmental Disclosure–SEC v. EPA*, 31 BUS. LAW. 1907 (1976).

195. *See* the discussion *supra* at 262-64.

196. Pub. L. No. 95-95, § 106, 91 Stat. 691 (amending § 109 of the 1970 Act) (to be codified at 42 U.S.C. §7409(d)(1)).

197. 42 U.S.C. §1857c-3(c) (1970).

198. Pub. L. No. 95-95, § 112, 91 Stat. 706 (amending § 113 of the 1970 Act) (to be codified at 42 U.S.C. § 7413(d)(3)).

the EPA if the state failed to act. The non-compliance penalty is payable in quarterly installments for an amount designed to be equal to the economic advantage the firm obtains from non-compliance. The source may not delay compliance beyond July 1, 1979 without paying the penalty.[199]

This provision represents a definite and positive change in philosophy. It gives the source a stronger incentive to comply because it will now be costly to delay. They also have an incentive to agree to the penalty because they will not be subject to other enforcement actions while this argument is in force. Furthermore, Section 113 encourages a state to move forward on stationary source control. If the state does not adopt the compliance penalty approach, EPA may impose it; if the state adopts and enforces this provision, any penalties collected will accrue to the state. Failure to act, on the other hand, leads to EPA preemption of enforcement and the penalties go instead to the federal treasury.

However, the non-compliance penalty is not without its difficulties. For example, the level of the penalty is crucial because if it is set too low, non-compliance is less expensive than compliance. Since the source provides the information upon which the penalty is based and since compliance costs are difficult to determine, there is incentive and opportunity to understate the costs of compliance. Nevertheless, although disputes are unavoidable, Section 113 is a step toward greater effectiveness in control.

In sum, we see a dim future for the 1977 Act. It does not solve the enforcement issue because EPA will still have to enforce provisions if a state refuses. In addition, the technocratic philosophy is retained. We believe that the 1977 Act will fail for the same reasons the 1970 Act has failed and that in 1982 we shall again find Congress laboring diligently to revise the Act.

NEW PHILOSOPHY NEEDED

We believe that experience with the 1970 Act indicates the need for a new philosophy for federal air pollution legislation. Our purpose is not to suggest an alternative; we wish merely to point out this need. However, past experience warrants the raising of several issues which we think should be considered in any debate about alternatives.

First, we think it is necessary to question the necessity of a federal role in air pollution control. The experience with the 1970 Act indi-

199. *Id.*

cates that a massive federal involvement in the details of local control is not possible,[200] and limitations on direct federal involvement argue for a primarily informational role. Yet, the 1970 Act amended a form of the law which was of this philosophy. Obviously, some compromise is possible between the juxtaposed philosophies advocating a highly active federal role on one hand and a mostly passive federal role on the other.

Second, in order to make any federal legislation more effective, emitters must be given better incentives to control. The non-compliance penalty in the 1977 Act is a good start. However, other systems such as Connecticut's Economic Civil Assessments may be more effective.[201]

Third, a way must be found to generate effective control action from the relevant agencies. The 1970 Act gave agencies at each level incentive to cast aspersions upon other agency's technical assessments or assessments of what is reasonable. The result has been excessive attention to who is to blame for failure. The 1977 Act does not change this incentive.

Fourth, a way must be found to generate more accurate technical data or, alternatively, less reliance on such data. Very little concrete data exists at present; it follows that basing a law on the existence of such data without significant incentives to produce the required data dooms the law to failure. Making it irrefutable in the courts is also another mistake. The 1977 Act does not alter the reliance on accurate technical information.

Fifth, all of these requirements must be encompassed within a law which is politically viable, in that it can achieve widespread political support. This final requirement undoubtedly complicates the task. However, if we are to obtain substantial improvements in air quality without wasting a lot of time and public and private resources, some new alternatives must be found. The Clean Air Act of 1977 perpetuates a philosophy which has not worked well. We believe that effective and politically viable alternatives can be generated.

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200. *See supra* at Tables I and II. Recall especially the reduction in the number of AQCRs which require transportation controls when standards and measurement technologies are changed.

201. Economic Law Enforcement, Dept. of Environmental Protection, Hartford, Conn. (Sept. 1975).