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Control of Complex Emissions Sources - A Step toward Land Use Planning

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Control of Complex Emissions Sources—A Step Toward Land Use Planning

INTRODUCTION

The Clean Air Amendments of 1970\textsuperscript{1} provide a broad framework for approaching the problem of air pollution. The Act spells out several techniques for reducing air pollution, including performance standards for emission sources,\textsuperscript{2} the Federal Motor Vehicle Control Program,\textsuperscript{3} and preconstruction review of potential new sources of emissions.\textsuperscript{4} The authors of the Act were aware that these techniques alone would not, in all probability, be adequate to achieve all the objectives of the Act. But rather than spelling out in detail the additional steps which would be needed, they required in general terms the taking of "such other measures as may be necessary . . . including, but not limited to, land use and transportation controls."\textsuperscript{5}

In implementing the provisions of the Act, the Environmental Protection Agency (EPA) has on occasion used this language to go beyond the specific programs mandated by the Act. One of the most recent developments of this kind is the institution of controls on the construction or modification of complex sources.\textsuperscript{6} Complex sources are facil-

\begin{enumerate}
\item EPA defined a complex or indirect source as "a facility that has or leads to secondary or adjunctive activity which emits or may emit a pollutant for which there
\end{enumerate}
ties which do not themselves emit pollutants, but which lead to adjunctive activity which does produce emissions. The most obvious examples of complex sources are facilities which induce added automobile traffic, such as shopping centers, sports complexes, and places of employment.

Examination of present complex source control regulations and their place in EPA's strategy provides insight into the problems of implementing the Act and offers a clue to the future of air pollution control. Section A discusses the events which led EPA to develop complex source controls as part of the attack on air pollution. Section B focuses on the debate over the proper scope and nature of the controls. Section C examines EPA authority to impose complex source controls. Section D identifies some of the problems which are likely to arise in the administration of controls. Finally, some additional related techniques are suggested in Section E.

A
THE ORIGINS OF COMPLEX SOURCE CONTROLS

1. No Explicit Statutory Mandate

The Clean Air Act contains no direct reference to the problem of complex, or indirect, sources of air pollution. Section 110 of the Act requires each state implementation plan to include procedures "for review (prior to construction or modification) of the location of new sources to which a standard of performance will apply ..." New source performance standards under section 111 clearly are to be published only for sources which themselves emit air pollutants.8

Recent regulations9 promulgated by EPA, however, assert authority for review, prior to construction or modification, of certain classes of complex sources. These regulations were issued in response to the

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8. Section 111(a)(3) of the Act requires publication of performance standards for "any building, structure, facility, or installation which emits or may emit any air pollutant." 42 U.S.C. § 1857c-6(a)(3) (1970) [emphasis added]. This can hardly be an authorization for the control of complex sources as EPA has defined them. See note 6 supra.


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decision in a suit brought by the Natural Resources Defense Council (NRDC) against EPA. The issues in this case and its aftermath go to the core of the structure of the Clean Air Act.

2. Natural Resources Defense Council v. EPA

A coalition of environmental groups led by the Natural Resources Defense Council petitioned for review of a series of actions by the EPA Administrator. NRDC contended, inter alia, that the Act imposed a duty on the Administrator to disapprove state plans which failed adequately to provide for maintenance of ambient air quality standards once achieved. The Act creates a timetable for the formulation of state plans for the attainment of national standards. In addition, the Act requires each state plan to include measures to insure the maintenance of national primary and secondary ambient air quality standards once achieved.

Many state plans as initially submitted were sketchy in their proposals for maintaining standards. Though the Administrator took note of the limitations in the state plans, he took no action to require the states to formulate adequate plans. Nor did he issue substitute regulations pursuant to his duty under section 110(c) to promulgate substitute control plans for states which do not submit adequate plans of their own. The Administrator explained EPA's position largely on two grounds: population growth projections necessary for maintenance planning are difficult to develop and of uncertain accuracy, and both the state agencies and EPA lack the necessary expertise to make such determinations.

11. NRDC had originally filed suits raising similar issues in several circuit courts of appeals. The cases were consolidated for consideration in the Court of Appeals for the District of Columbia.
12. NRDC also challenged the Administrator's granting of extensions for submitting implementation plans to those states in which transportation controls were required and the granting of two year extensions to the same states for the attainment of national primary ambient air quality standards. The court held both EPA actions illegal. 475 F.2d at 970, 4 ERC at 1946 (D.C. Cir. 1973). See State Plans and Enforcement, supra note 5, text accompanying notes 7-9.
15. Id.
16. Id. The Administrator is required to promulgate substitute control plans or portions thereof for states which fail to devise adequate plans. Clean Air Amendments § 110(c), 42 U.S.C. § 1857c-5(c) (1970). See State Plans and Enforcement, supra note 5, text accompanying notes 145-47.
The court, however, accepted NRDC's contention that EPA had failed to meet the requirements of the Act. The court directed EPA to disapprove plans which failed in any way to meet the requirements of the Act. It specified a deadline by which the Administrator was required to approve or disapprove the maintenance provisions of state plans\(^1\) and ordered EPA to promulgate substitute plans for states whose plans proved inadequate.\(^1^0\)

3. EPA Response

The court's ruling in *NRDC v. EPA* did not require the Administrator to take any specific steps beyond fulfilling the procedural and substantive requirements of the Act.\(^2^0\) Specifically, EPA was not ordered to impose complex source controls as a tool for insuring maintenance of air quality standards, either in states with acceptable maintenance plans, or in states which the Administrator's review might determine to have defective plans. Yet EPA was soon to require complex source controls for all states.

Pursuant to the court order, the Administrator reviewed the portions of all state plans dealing with air quality maintenance. On completion of this review, he found "that no state plan contained adequate growth projections for any significant period of time into the future"\(^2^1\) to permit approval. EPA further concluded that "projecting future growth and limiting present emissions in order to provide opportunities for this future growth of emission sources"\(^2^2\) was not an adequate method of insuring maintenance of standards into the indefinite future. The maintenance portions of all state plans were thus disapproved. This left EPA in an awkward position. It had rejected the states' approach to the problem but had not given them any clear indication of what measures would be acceptable. To make matters worse, little specific guidance could be found in the court's decision. EPA responded with a bold new step. It decided to require state implementation plans to include both a procedure for review of "a wide range of new sources and causes of air pollution"\(^2^3\) and also the authority to prevent construc-

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20. In his concurring opinion, Judge MacKinnon expressed the view that the court's holding was basically procedural: "[t]he Administrator did not walk through all the steps provided by statute and our order requires that he do so." 475 F.2d at 972, 5 ERC at 1879.


22. *Id.*

23. *Id.*
tion or development of such sources where necessary to insure maintenance.

This approach provided a system which would mesh well with existing programs. Review of this "wide range of new sources" could easily be assimilated into the procedures under section 110 of the Act, which required states to develop preconstruction review of new stationary sources. But the decision to review complex sources was only a beginning, leaving major issues yet to be settled.

B

THE SCOPE OF REVIEW

EPA's development of complex source controls took place in several stages. At each of these stages, important changes in the scope and function of the controls were made. Proper description of the development of the regulatory framework first of all requires the separation of EPA's promulgations into two groups.

The first group of regulations governs state plan content. It specifies the minimum complex source controls which state plans must contain in order to obtain EPA approval and guides the states in formulating air pollution control strategies. The second set of regulations was issued when states failed to submit adequate control plans by the required deadline. They were issued under the Administrator's statutory authority to promulgate substitute plans or portions thereof for states which fail to submit plans meeting the Act's requirements.

These substitute regulations are thus different in purpose from the first set of regulations in that they are not merely a guide to states in formulating review procedures but are a comprehensive set of regulations which will be used directly by EPA in conducting the review process if states fail to adopt adequate regulations.

1. Regulations Governing State Plan Content

The regulations setting forth state plan requirements were formu-

24. See New and Hazardous Sources, supra note 2, text accompanying notes 30-36.
25. The rules governing state plans were formulated in three stages. See notes 28-30 and accompanying text infra.
lated in three stages. The first consisted of proposals which were published as guidelines in order to give the states some advance notice of the likely nature of the requirements. After modification, the guidelines were officially published as proposed rules. After additional alterations, they became final regulations. An examination of the substantive changes which occurred at each stage provides a useful guide to EPA thinking on the subject of complex source regulation and serves to illustrate many of the major issues which such regulation presents.

a. The Original Guidelines

In conjunction with his disapproval of state plans with respect to maintenance, the Administrator issued an advance notice specifying certain provisions which maintenance portions of state plans were required to include in order to gain EPA approval. The provisions embodied two primary requirements: 1) a tightening of the standards under which a state could exempt certain new stationary sources from the preconstruction review required by section 110 of the Act and 2) the requirement that states adopt legally enforceable procedures for reviewing the potential impact of construction or modification of complex sources. Most importantly, states were required to possess the authority to prevent such construction or modification where it would interfere with the attainment or maintenance of national ambient air quality standards.

The notice contained a definition of complex sources, significant in view of later changes:

A complex source is generally defined as a facility that has or leads to secondary or adjunctive activity which emits or may emit a pollutant for which there is a national standard.

Accompanying the general definition was a list of examples. Complex sources included, but were not limited to

(1) Shopping centers,
(2) Sports complexes,
(3) Drive-in theaters,
(4) Parking lots and garages,
(5) Residential, commercial, industrial, or institutional developments,

32. Id. at 6279.
(6) Amusement parks and recreational areas,
(7) Highways,
(8) Sewer, water, power, and gas lines, and other such facilities
which will result in increased emissions from motor vehicles or
other stationary sources.\textsuperscript{38}

The guidelines clearly would have required the states to assert a
very broad authority over many of the most important determinants of
growth and development and to use that authority in the interest of long
term maintenance of air quality standards. The guidelines would also
have required review of almost all major land use decisions to deter-
mine their impact on air quality. Most new developments would have
been subject to disapproval if they interfered with this objective, either
through review of the projects themselves or through review of their
water, power, gas, or highway connections.

The guidelines raised several major questions. The first of these
was how the review process would relate to existing land use control
and planning, a subject traditionally left to local government.\textsuperscript{34} If the
guidelines had become final regulations in their original form, they
would have been, in effect, a directive to the states to institute state-
wide land use control—a step which has been strongly resisted in many
states.

Another major question was how determinations based on the
single criterion of air quality could be integrated into a decisionmaking
process which necessarily involved the consideration of other factors,
such as water quality, urban redevelopment, open space effects, eco-
nomic growth, and avoidance of social dislocation. In essence, the
Clean Air Act is a flat mandate to attain and maintain an acceptable
level of air quality; it does not expressly provide for trade-offs with other
social goals.\textsuperscript{35} This singleness of purpose makes the Act an awkward
tool with which to accomplish nationwide land use planning.

b. The Proposed Regulations

The guidelines were but a first step. They did not attempt to spell
out in detail a full regulatory scheme. In response to some of the un-
answered questions, substantial changes were made in the content of

\begin{itemize}
\item \textsuperscript{33} Id. at 6279-80.
\item \textsuperscript{34} Some recent legislation has instituted land use control on a regional scale.
\textit{See}, e.g., the Federal Coastal Zone Management Act, 16 U.S.C.A. § 1454(f) (Supp.
1973). \textit{See generally} Mandelker, \textit{The Role of Land-Use Controls in Combating Air
Pollution Under the Clean Air Act of 1970}, 3 ECOLOGY L.Q. 235 (1973) \cite{Mandelker}.
\item \textsuperscript{35} \textit{See generally} Note, \textit{Implementation of the Clean Air Act: Should NEPA
Apply to EPA?}, 3 ECOLOGY L.Q. 597 (1973).
\end{itemize}
the guidelines when they were published as proposed rules. The first of these changes was an attempt to provide for integration of complex source review with existing land use planning.

(1.) Delegation to local agencies

The proposed regulations made it clear that states could choose to delegate the authority for complex source review to local agencies. The Administrator recognized that, in many areas, local governmental agencies have the responsibility for final decisionmaking on applications for approval to construct or modify many types of facilities, buildings, structures, and installations. Providing for such decisionmaking at the local level is consistent with the Clean Air Act.

Proposed regulation section 51.1 made this policy explicit by allowing delegation to local government agencies.

(2.) Limitation to motor vehicle related complex sources

The proposed rules incorporated another major development. In a marked departure from the guideline proposals, the definition of complex source was changed to include only those sources which increased emissions by inducing greater motor vehicle use. This alteration omitted a large class of sources which would have been subject to review under the earlier proposals.

Construction or modification of facilities may result in demand for power or waste disposal, thereby drastically increasing emissions from waste or power facilities. Point-source performance standards, required by section 111 and applicable to power plants or incinertors, are set in terms of the amount of emission per unit of output. Therefore, construction of a new facility which increases the demand for power or waste disposal could indirectly cause an increase in emissions, even though the generating or disposal facilities meet the new source performance standards. There would only be review under section

37. Id.
38. Id. at 9600. The regulations did not require delegation to local land use agencies in all cases. States could delegate to other local agencies if they deemed it appropriate. This further facilitated the integration of complex source review with existing land use planning.
39. See New and Hazardous Sources, supra note 2, text accompanying notes 15-17.
40. This is true because the output increases while the ratio of emissions to output stays constant. Though most single sources will not place great added demand on power generation, they will cumulatively have such effects; power consumption in the U.S. is increasing by approximately 8% per year. See Spengler, Report on Complex Source Evaluation, Harvard School of Public Health (1972) (unpublished study) [hereinafter cited as Complex Source Evaluation].
if the increase in demand would be large enough to require plant modification or construction of new generating or disposal facilities, and then only of the emitting facility.

This alters the political balance. For example, the air pollution control authority would find it much easier to prevent construction of a new housing project than to allow the housing project to be built and then to face the problem of denying the necessary increase in generating power. In the latter case, greater pressure would be brought to bear to relax air quality standards.

There are additional effects of limiting review to motor vehicle related complex sources. The guideline proposals would have asserted authority broad enough to allow air pollution authorities to control the general pattern of growth and development in the interest of air quality maintenance. Clearly this would have included assessing projected facilities in terms of the long-run stimulus to growth which they represented. Limiting consideration to sources which induce added automobile traffic considerably weakens the potential for consideration of such effects.

(3.) Non-destination effects

The proposed regulations required states to have legally enforceable procedures to prevent construction or modification which would result in violations of applicable portions of the control strategy or will interfere with attainment or maintenance of a national standard either directly, because of emissions from it, or indirectly, because of emissions resulting from mobile source activities associated with it.41

This language seems to rule out consideration of traffic generated by a development which does not have that development as its origin or terminus. In many cases, the traffic resulting from the construction of a facility but not directed to or from the facility comprises a substantial portion of the total increase in motor vehicle use attributable to that project. For example, office buildings which replace urban housing may move many former residents to new locations where they will need to do more driving. Similarly, the development of open land near city centers may induce a great deal of additional motor vehicle use by residents who must travel farther for recreation.42

It is not clear whether the Administrator intended to include or exclude such review when he developed the regulations. One likely reading of the regulatory provisions may be that such considerations

42. In addition, general congestion in the area may cause some previous users to avoid the area, causing greater traffic flow elsewhere.
failed to enter at all into the drafting of the rules. On the one hand, a reviewing authority wanting to include such factors in its examination of applications might find support for such a step in the language of the Appendix accompanying the regulations. It recommends that state plans provide for review of "any facility which can reasonably be expected to cause or induce sufficient mobile source activity so that the resulting emissions might be expected to interfere with" attainment or maintenance of a national standard. On the other hand, there is no language which would seem to be a clear mandate to include such review.

(4.) Size criteria

The proposed regulations included no specific criteria for determining what size of complex sources the states must subject to review. This omission resulted from the Administrator's judgment that the likelihood that air quality standards would be threatened would "vary with local conditions, such as current air quality, meteorology, topography, and growth rates."

Neither did the proposed regulations contain a list of the types of facilities which should be subject to review, as was the case with the guidelines.

The states were thus free to set their own threshold criteria for review. The Appendix did recognize that certain facilities should not in most cases be exempt. Specifically, states were encouraged to review highways and airports for which environmental impact statements would be required under the National Environmental Policy Act, shopping centers with more than 800,000 square feet of leasable space, and sports complexes which could be expected to draw crowds of 25,000 or more.

43. Proposed Rules for State Plans, supra note 29, 38 Fed. Reg. 9601 (1973) (emphasis added). In addition, this language could be interpreted to allow consideration of all vehicle travel caused or induced by the proposed development, not merely travel beginning or ending there.

44. Id. It should be noted that taking current air quality into account in setting criteria seems to run contrary to the Act's requirement that significant deterioration of air quality in areas where air is now cleaner than required be prevented. See Sierra Club v. Ruckelshaus, 344 F. Supp. 253, 4 ERC 1205 (D.D.C.), aff'd mem., 4 ERC 1815 (D.C. Cir.), aff'd by an evenly divided court sub nom. Fri v. Sierra Club, 412 U.S. 541, 5 ERC 1417 (1973). For a further discussion of this problem, see text accompanying notes 153-61 infra. See generally Note, The Clean Air Act and the Concept of Non-degradation: Sierra Club v. Ruckelshaus, 2 ECOLOGY L.Q. 801 (1972); Comment, VI: Sierra Club v. Ruckelshaus—On A Clear Day . . . , 4 ECOLOGY L.Q. 739 (1975), text accompanying notes 66-84 [hereinafter cited as On a Clear Day].


(5.) Pollutants

The duty to maintain national air quality standards applies to all pollutants for which standards have been issued, regardless of their sources. The limitation of complex source controls to those sources producing emissions through the inducement of motor vehicle travel limits control of sulfur dioxide (SO$_2$) and particulate emissions since vehicles do not produce these pollutants to any great extent. This ignores the problem of maintaining standards for pollutants unrelated to vehicular sources. Apparently EPA intended to control these latter emissions by tightening the regulations which had allowed states to exempt broad classes of new stationary sources from review. Though there are no empirical data which show that maintenance of SO$_2$ and particulate standards without complex source controls will be inadequate, an analogy to the automobile problem leads one to question its effectiveness. If direct controls on automobiles under the Federal Motor Vehicle Control Program are not adequate to meet or maintain national standards without the use of additional steps to limit the demand for automobile use, such as complex source controls and transportation plans, it may be that direct controls on stationary sources of SO$_2$ and particulates will be inadequate without curbing demand by some sort of growth controls or review procedures. Such apprehension may have influenced EPA to recommend that states compile growth projections to aid in determining review procedures.

c. The Final Regulations

The final regulations covering state plan maintenance provisions were substantially the same as the proposed regulations. There were, however, several significant changes and additions.

(1.) Problem area identification and growth analysis: Air Quality Maintenance Plans

Many public comments on the proposed regulations criticized a source-by-source analysis of emissions as inadequate to insure maintenance of standards. The final regulations move toward a more comprehensive analysis by requiring states to identify within nine months "those areas . . . which, due to current air quality and/or project growth rate, may have the potential for exceeding the national standard

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48. Maintenance of standards for SO$_2$ and particulates is addressed to some degree by EPA's regulations relating to state Air Quality Implementation Plans. See text accompanying notes 134-52 infra.

49. The Federal Motor Vehicle Control Program is established under Title II of the Clean Air Amendments. See The Automobile Controversy, supra note 3.

50. See text accompanying notes 149-52 infra.
within the next 10-year period."\textsuperscript{51} States are also required to develop plans to prevent any national standard from being exceeded over the 10-year period from the date of the plan submittal.\textsuperscript{52} It is significant that some of the information which states must provide in conjunction with these projections is oriented toward control of a broad range of complex sources,\textsuperscript{53} including non-motor-vehicle related sources.\textsuperscript{54}

(2.) Governmental agencies

The final regulations provide, as do the proposed rules, that authority for review could be delegated to local agencies other than air pollution control agencies. This provision originally was criticized on the ground that local agencies exercising land use powers might in many cases lack the necessary expertise in air pollution control or be too unsympathetic to air quality requirements to be effective in enforcing complex source regulations. In response, the final regulations include a provision requiring the local land use agency to "consult with the appropriate State or local air pollution control agency in carrying out the provisions of this section,"\textsuperscript{55} if the review authority is vested in such a local agency. Furthermore, the agency responsible for new source review is required to notify all air pollution control agencies within the air quality control region of proposed construction or modification in order to allow them to assess the air quality impact of the proposed development.\textsuperscript{56}

(3.) Size of sources subject to mandatory review

Unlike the proposed regulations, the final regulations make no suggestions concerning the size of new sources which should be reviewed, on the ground that variation in local conditions makes it impracticable to set uniform national requirements.\textsuperscript{57} The Appendix to the regulations does suggest that certain facilities be "considered for review." These include "major highways and airports, large regional

\textsuperscript{51} Final State Plan Regulations, supra note 30, 40 C.F.R. § 51.12(e) (1973).
\textsuperscript{52} Specifically, the states are required to take into account "not only the increased air pollution arising directly from new commercial, industrial, and residential development, but also that arising from increases in demand for electricity and heat, motor vehicle traffic, and production of solid waste." Periodic review is required to determine whether additional areas should be included on the designated areas list, and to discover if the measures being taken in previously designated areas are proving adequate to provide for maintenance of the standards. Id.
\textsuperscript{53} Id. § 51.12(2).
\textsuperscript{54} See text accompanying notes 128-33 infra.
\textsuperscript{55} Final State Plan Regulations, supra note 30, 40 C.F.R. § 51.18(e) (1973).
\textsuperscript{56} Id. § 51.18(e). But experience may teach that this consultation requirement has little practical effect and that local land use agencies will give no more than passing attention to the recommendations of the air pollution control authorities.
\textsuperscript{57} Id. Appendix O to Part 51 at 258.
shopping centers, major municipal sports complexes or stadiums, major parking facilities, and large amusement and recreational facilities.”

The decision about what types and sizes of complex sources should be reviewed raises a number of troublesome issues. First, since the states are free to adopt additional measures to insure maintenance, the types and sizes of complex sources which need to be reviewed may in part depend on the strength and effectiveness of these other measures. The adoption of sufficiently effective alternatives may obviate the need for review of complex sources altogether. The state could then argue that it has no need for complex source control. Yet EPA’s flat mandate would seem to require states to establish review procedures regardless of the efficacy of alternative control methods.

Another problem, largely technological in nature, is the difficulty of measuring the effect of a single new source on overall ambient air quality. This problem is compounded in the case of complex sources because the amount of motor vehicle travel which will be induced is one more quantity that must be estimated. Trying to estimate the overall air quality impact of such development ten years into the future is even more difficult. It is not an easy task to fit hazy empirical projections into a specific series of regulations delineating the exact sizes and types of new sources which must be reviewed. EPA delegated this problem to the states by requiring them to set the criteria for review and to justify and substantiate their decisions in selecting such criteria.

Finally, complicated planning issues are involved. If air quality maintenance requires the approval of only a limited number of new projects, which of the competing new projects should be approved? It does not seem to be sound policy to approve new construction on a first-come, first-served basis; it also seems that air pollution agencies might be ill-equipped to make such social cost-benefit decisions.

58. Id.
59. The federal regulations require the states to have the authority to prevent construction, modification, or operation of a facility, building, structure, or installation, or combination thereof, which directly or indirectly results or may result in emissions of any air pollutant at any location which will prevent the attainment or maintenance of a national standard. 40 C.F.R. § 51.11(a)(4) (1973) (emphasis added). But the required authority for review of new sources is a good deal narrower. States are required only to have authority to prevent construction or modification and to exercise it only when the proposed facility will threaten national standards, “either directly because of emissions from it, or indirectly, because of emissions resulting from mobile source activities associated with it.” 40 C.F.R. § 51.18(a) (1973).
61. States are directed to “identify types and sizes of facilities . . . which will be subject to review” and to “discuss the basis for determining which facilities shall be subject to review.” 40 C.F.R. § 51.18(f) (1973).
62. Even more difficult issues arise when there are competing projects in different
(4.) Nondegradation

A final issue is raised by the new regulations. If the only purpose of the preconstruction review of complex sources is to assure maintenance of national ambient air quality standards, there seems to be nothing requiring disapproval of new construction which would not threaten maintenance of national standards but which would result in significant deterioration of air quality in areas where air is now cleaner than required by national standards. The Clean Air Act requires prevention of such deterioration. Yet the Appendix to the regulations specifically allows states to take current local air quality into account in deciding the size of new sources which will be subject to review. It is difficult to see how this apparent sanctioning of more lenient standards in areas where air is presently cleaner than required will prevent significant deterioration of air quality in those areas.

2. State Failure; Promulgation of Substitute Plans

With few exceptions, states failed to submit adequate plans for maintenance of national standards by the required deadline. This is not surprising in view of the political resistance such proposals elicited, the technical difficulties that were involved, and the limited time that was allowed for the required public comment.

As required by the Act and the court order in NRDC v. EPA.

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political jurisdictions within a single air quality region. See note 188 infra. See also Implementing the Clean Air Act in Los Angeles, supra note 5.

63. Sierra Club v. Ruckelshaus, 344 F. Supp. 253, 4 ERC 1205 (D.D.C.), aff'd mem., 4 ERC 1815 (D.C. Cir.), aff'd by an evenly divided court sub. nom. Fri. v. Sierra Club, 412 U.S. 541, 5 ERC 1417 (1973). See also Note, The Clean Air Act and the Concept of Non-Degradation: Sierra Club v. Ruckelshaus, 2 ECOLOGY L.Q. 801 (1972); On a Clear Day, supra note 44. The primary purpose of the regulations is maintenance of air quality standards though they may serve the useful corollary purpose of helping to attain standards. The corollary effect will likely not be too important, however, since the program will not begin to take effect until 1975, the year when primary ambient air quality standards are to be achieved. Final State Plan Regulations, supra note 29, 38 Fed. Reg. 15834 (1973).


65. See text accompanying notes 153-57 infra for a more complete discussion of the relationship between complex source regulation and the policy of prevention of significant deterioration.

66. Only Alabama, Florida, and Guam submitted plans which were tentatively approved within the required deadline. All other state plans were disapproved. Proposed Substitute Regulations, supra note 26, 38 Fed. Reg. 29894 (1973).

67. States had the period from June 18, 1973, the date of the publication of the final rules for state plans, until August 15 to adopt and submit plans. The comment period required by § 110(a)(3), 42 U.S.C. § 1857c-5(a)(3) (1970) somehow had to be included in this time.

68. Id. § 110(c), 42 U.S.C. § 1857c-5(c) (1970).

69. 475 F.2d 968, 971, 4 ERC 1945, 1946 (D.C. Cir. 1973).
the Administrator promulgated substitute plans for states which had failed to submit adequate maintenance plans. These regulations will be enforced by EPA itself, except where states agree to accept delegation of review responsibility. The regulations represent a direct step by EPA into the arena of land use planning and growth control. It is a hesitant first step, for the agency's first move was tempered somewhat between the time of the promulgation of the proposed regulations and the publication of the regulations in their final form. Nevertheless, it is a step with important long-run implications.

The substitute regulations take the same basic approach to air quality which the earlier regulations governing state plan content had outlined for the states. Maintenance of air quality standards was to be assured in part by requiring preconstruction review of certain projects which would indirectly lead to increased emissions through inducing increased motor vehicle use. Further maintenance measures would be required as a part of the growth projections and accompanying regulations which the states were required to prepare.

a. Criteria for Review

The substitute federal regulations require a stricter standard of review for areas in which there is a greater threat to maintenance of standards. The proposed substitute regulations envisioned applying the stricter standard to designated areas which would be identified by maintenance studies. The Administrator then announced that, pending the completion of such studies, the agency would regard any Standard Metropolitan Statistical Area (SMSA) as a potential problem area where the stricter standard would apply. The final substitute regulations, however, abandon the designated area concept and use SMSA's not simply as an interim measure but as the permanent boundaries for the application of the stricter standard.

The regulations govern three types of complex sources. The first, and most significant, is parking facilities. In addition, there will be review of certain new highways and airports. Since the criteria are dif-

70. In the preamble to the Final Substitute Regulations, supra note 9, the Administrator expressed the hope that states would seek such delegation. 39 Fed. Reg. 7274-75 (1974). See also text accompanying notes 183-85 infra.
73. See text accompanying notes 134-52 infra.
74. These Air Quality Maintenance Plan studies are discussed in text accompanying notes 134-52 infra.
ferent for the three types of sources, they will be treated separately.

(1.) Parking areas
(a.) Within SMSA's

A new source located within an SMSA will be subject to review if the parking facilities associated with it have a capacity of 1,000 cars or more or if any modification is undertaken which will increase capacity by 500 cars or more. Though this standard seems straightforward enough, its application will lead to a number of serious difficulties.

First, parking lot size is an imperfect measure of the impact of a proposed development on air quality. The emissions produced by motor vehicles traveling to and from a facility may bear little relationship to the size of the parking area. Some facilities which induce a great increase in motor vehicle traffic will escape review altogether because they do not have parking lots large enough to require review.

Several types of traffic are poorly measured by the parking lot size criterion. For example, commercial vehicle traffic is not counted since commercial vehicles may use loading docks or other areas which are not considered part of the facility's parking lot. A second type of induced travel which escapes measurement is traffic which is generated by the facility but which does not originate or terminate there. Further, parking lot size does not reflect the potential of a facility for inducing additional growth in its vicinity. Finally, it does not indicate the potential congestion in the area surrounding the facility. In an already congested area, the addition of even a few cars may have a disproportionate effect on traffic flow.

EPA had earlier suggested several measures which would have avoided some of these defects. The proposed substitute regulations, for example, would have required review of facilities with sufficiently large parking areas or facilities which induced more than a specified

77. Id. § 52.22(b)(2)(i), 39 Fed. Reg. at 7277. All increments after the effective date of the regulations, or the most recent permit given to the facility, will be added together to determine whether review is necessary. It may be questioned whether this will not lead to a fairly widespread practice among developers of applying for permits to construct parking lots smaller than those eventually desired, then adding an increment of slightly less than 500 cars capacity, which increment will be small enough not to require review.

78. Such trips may be a substantial part of the total vehicle travel induced by the facility. See text accompanying notes 41-43 supra.

79. See text accompanying notes 126-31 infra.
number of vehicle trips. All measurements other than parking lot size were dropped from the final regulations. The parking lot size criterion was chosen primarily because other measures are harder to estimate, and most developers lack the expertise to calculate them. The choice of this criterion was thus a concession to convenience.

Once the review process is triggered, however, approval or disapproval of the proposed construction or modification will turn on the air quality impact of the facility, not merely on parking lot size. Other factors, including induced vehicle trips and traffic flow characteristics, will be used to make an estimate of the additional emission produced. Nevertheless, many projects with significant adverse effects on air quality may escape review because their impact on air quality is not accurately reflected by their parking lot size.

In addition, the regulations are inconsistent with a review based on overall air quality impact. The Administrator has asserted that parking lot size is used only as a convenient, easily defined parameter which serves as a 'triggering mechanism' for determining whether a source is subject to review . . . . When a source is being reviewed under the regulations, factors related directly to air quality impact will be utilized in making the final determination.

But this begs the question. Will review in fact be triggered on the appropriate occasions?

One of the most troublesome problems is the looseness of the term "associated parking area." EPA defined such an area as "a parking facility or facilities owned and/or operated in conjunction with an indirect source." But this definition leaves a number of major issues unclear. First, it is uncertain whether a facility which is constructed after the effective date of the regulations, but which is to operate in conjunction with existing parking facilities, requires review. The amount of increased traffic would of course be the same in either case.

A second problem is the one of aggregation of parking areas serv-

81. Final Substitute Regulations, supra note 9, § 52.22(b)(2), 39 Fed. Reg. 7277 (1974). An alternative which would have some of the advantages of a trip-induced measurement but which would avoid many of the pitfalls of the parking space measure would be the leasable space concept suggested in the Proposed Rules for State Plans, supra note 29, 38 Fed. Reg. 9601 (1973). By focusing on the facility itself rather than the parking lot, it would make evasion of review more difficult.
83. Id.
84. The aim of the regulations is to prevent unacceptable increases in emission levels. Emission levels are related only indirectly to parking lot size. Thus, though parking lot size is used for determining what projects will be reviewed, more inclusive criteria are used in conducting the review. See text accompanying notes 207-18 infra.
ing a single facility. The construction of a large office building will create economic incentives for the construction of additional parking areas. If three or four parking facilities are constructed in response to this demand, each might be too small on its own to require review. But if EPA were to take the position that the facilities were operated in conjunction with the office building, the aggregate number of spaces could be large enough to require review. 87

Further difficulty lies in determining whether a project is a separate facility or whether it is part of a larger whole whose parking spaces are to be added together for purposes of determining whether the development is subject to review. This question is especially significant in the context of major urban redevelopment projects, which may include residential, commercial, and public facilities built pursuant to a single plan in a centralized area. Such a project would likely have a number of parking areas of various sizes. Though no one component of the project might be large enough to require review, the project as a whole would almost certainly have a significant air quality impact. It is clear that these ambiguities create planning problems for developers in many instances. Lack of certainty as to whether a project would be reviewable or not has led to a number of complaints by developers. 88

There were great pressures on EPA to make a clear choice of approaches. Two basic avenues were open. The Administrator could either choose to interpret the regulations broadly to cover some of the large scale development projects outlined above or take a narrow approach which would limit review to a smaller number of instances. The narrow approach was chosen.

EPA's clarifying amendments 89 adopt a limited view of both the term "associated parking area" and the phrase "owned and/or operated in conjunction with" a parking area. Construction of new areas using parking facilities constructed prior to the effective date of the regulations or which have already been reviewed and approved will not fall within the regulations. 90 The components of an urban renewal project will have their parking areas considered separately in determining whether they are large enough to require review. 91 The parking facility will not be considered to be "owned and/or operated" in conjunction with an installation unless there is an express or implied agreement between the developer of the parking area and the developer of the installation it serves to construct their facilities according to some common

87. For a fuller discussion, see note 216, infra.
88. Some of these complaints are described in the preamble to the Amended Substitute Regulations, supra note 26, 39 Fed. Reg. 25292 (1974).
89. Id.
90. Id. at 25293.
91. Id.
The mere fact that the construction affects market forces so as to make the construction of a parking area almost inevitable will not suffice to make the project reviewable.

EPA's clarifying amendments do not answer all questions which may arise; they do not purport to. But significant questions about the effect of complex source regulation remain unanswered. Among them is the question of what role the concepts of "intent" or "implied agreement" have in air pollution control strategy. Investigating the subjective states of mind of land developers is not likely to be a fruitful exercise. The administrative burdens on EPA are already great, and the developers' agreement or lack thereof has absolutely no impact on air quality.

Finally, it should be noted that review of these facilities will be limited to the analysis of a single pollutant—carbon monoxide. Although there is some technical justification for this step in that carbon monoxide is the easiest of the automobile pollutants to measure, this limitation of the review process is the source of several difficulties, discussed elsewhere in this Comment.

(b.) Outside SMSA's

Outside SMSA's, the same set of issues will be faced in the context of larger size cutoffs for review. In these more rural areas, EPA will review only sources which have associated parking areas with a capacity of 2,000 cars or more or a modification which will add capacity of 1,000 cars or more to existing parking areas. Control of the overall pattern of development in such areas will be difficult because this regulatory handle on proposed construction is very limited.

92. A parking area which serves a shopping center but which is "completely independent" of the shopping center will not be aggregated with the parking area of the shopping center in determining reviewability. However, if such parking garage were constructed pursuant to an explicit or even implied agreement with the shopping center developer, the two parking areas would be aggregated. Id. at 25294.

93. Many questions will be resolved on a case-by-case basis by EPA. Id. at 25295.


95. See text accompanying notes 158-61 infra.

96. EPA has estimated that at least 150 parking garages and 350 shopping centers per year will have to be reviewed in the entire nation. L.A. Times, October 27, 1973, at 24, col. 2. Since smaller projects will be reviewed within SMSA's, it is likely that the majority of these 500 projects will be within SMSA's. Thus it is highly unlikely that any one region outside SMSA's will have more than a handful of reviewable projects per year. Many regions will have none. Review of these few projects will not be a tool to allow sufficient control over the pattern and character of growth in such areas.

The more lenient standard in the supposed clean air areas outside SMSA's may not be permissible under the Clean Air Act's policy of non-deterioration. See text accompanying notes 153-61 infra.
(2.) **Airports**

EPA's substitute regulations call for review of airport construction, whether inside or outside SMSA's, where the construction or modification will result in an expected traffic volume within ten years of commencement of construction of either 50,000 or more operations per year by regularly scheduled carriers or use by 1,600,000 or more passengers per year. Only very large airports will thus be subject to review. These criteria have apparently been adopted because they represent the smallest increments which produce photochemical oxidant and oxide of nitrogen increases large enough to be measured or predicted with confidence. Since airports will be reviewed for their effects on the levels of these pollutants in addition to carbon monoxide, the Administrator believes that such size cutoffs are necessary.

Although review of somewhat smaller airports will nevertheless be insured if their associated parking areas meet the general review criteria, such review will be limited to carbon monoxide emissions. A further limitation is that like all other parking lot review, it may be confined to review of associated passenger car traffic, excluding aircraft and commercial vehicle emissions. It could be argued, however, that once the review process is triggered by parking lot size, it is appropriate to review the total impact of the proposed source. EPA could then use the review to gain some control over all emissions related to the proposed airport.

(3.) **Highways**

Highways, unlike airports, will be reviewed only inside SMSA's. The rationale for this scheme is that few highways outside metropolitan areas carry sufficient traffic volume to present a threat to maintenance of primary or secondary standards and that most major highway systems begin or terminate in metropolitan areas where they will be subject to review.

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98. Dulles Airport near Washington, D.C. had a traffic volume of only 2,500,000 in 1972. *Information Please Almanac* 466 (1974). Oakland International Airport had only slightly more than 50,000 aircraft operations in 1973, including nonscheduled operations. (Oakland Airport administration, telephone interview). Indeed, the Administrator has acknowledged that it is probable that no airport projects large enough to be reviewed will be undertaken during the first year the regulations become effective. *L.A. Times*, October 27, 1973, at 24, col. 5.
100. Apparently, however, when airport projects are subjected to review processes because of the size of their associated parking facilities alone, only emissions related to the parking lot will be considered. *Id.* at 7274.
review under the regulations. But the rationale exposes some of the
difficulties raised by separating complex source control from long term
comprehensive growth analysis, for new highway projects are one of
the prime stimulants of areawide economic growth.\(^{102}\) It is not hard
to imagine that a major highway project, albeit in a rural area, could
lead to sufficient associated development to threaten national standards
or to cause significant deterioration in air quality.

Because of the technical problems in measuring photochemical
oxidant and oxide of nitrogen levels,\(^{103}\) only very large projects will be
reviewed for their effects on the levels of these pollutants. Only high-
way sections with an anticipated daily traffic volume of 50,000 vehicles
within ten years of construction or modifications to existing highways
which will add 25,000 vehicles per day to present volume within the
next ten years will be subject to review for their effects on nitrous ox-
ides and photochemical oxidants.\(^{104}\)

The regulations create another cutoff point for review of carbon
monoxide effects. Such projects must be reviewed if, in the case of
new construction, a daily traffic volume of 20,000 vehicles is anticipated
within the next ten years, or, in the case of modification, the next ten
years are expected to see an increase of 10,000 vehicles per day.\(^{105}\)

As in the case of airports\(^{106}\) and other projects,\(^{107}\) this will mean
that only relatively large new projects will be reviewed.\(^{108}\)

(4.) Effective dates

The proposed regulations provided for review of construction,
meeting the size and volume characteristics outlined above, if construc-
tion was begun after the effective date of the regulations, which was
to be 180 days after promulgation.\(^{109}\) Since the court order in NRDC
v. EPA required promulgation by December 15, 1973,\(^{110}\) the regula-
tions would have become effective in June of 1974. However, several
delays ensued. The court order was modified to allow a delay in pro-

\(^{102}\) Many developing nations see new highway systems as one of the keys to eco-
nomic growth. See, e.g., W. Hance, AFRICAN ECONOMIC DEVELOPMENT 118 (1967).

\(^{103}\) See text accompanying note 95 supra.

\(^{104}\) Final Substitute Regulations, supra note 9, § 52.22(b)(6)(ii)(b), 39 Fed.

\(^{105}\) Id. § 52.22(b)(2)(i), 39 Fed. Reg. 7277 (1974).

\(^{106}\) See text accompanying notes 97-100 supra.

\(^{107}\) See text accompanying notes 77-96 supra.

\(^{108}\) EPA believes that the proportion of new highway projects to be reviewed will
be higher than the proportion of airports or parking facilities. The Administrator has
stated that "most major highway projects" will be reviewed under these criteria. L.A.
Times, October 27, 1973, at 24, col. 5.


\(^{110}\) 475 F.2d at 970-71, 4 ERC at 1946 (D.C. Cir. 1973).
Congressional pressure and what were termed "compelling administrative reasons" caused a postponement of the date after which commenced construction must be reviewed until January 1, 1975. The regulations are, however, effective as of July 1, 1974, in order to allow developers planning construction which will start after the year's end an opportunity to submit applications early enough to avoid delay.

Some of the projects which would have escaped review by the postponement of the effective date will still be reviewed. This is because the change in effective date was accompanied by a more restrictive definition of commencement of construction. Under the new definition, only the first physical steps in a continuous program of construction or modification need be underway before construction will be regarded as having commenced.

b. Issues Arising from the Review Criteria

(1.) The review cutoff size

The large size of facilities which will escape review both inside and outside SMSA's was the subject of much adverse comment, most of which went to two of the central assumptions underlying the size cutoff.

(a.) Will strip development be promoted?

The first assumption is that developers will not reduce the size but rather increase the number of their projects in order to avoid review. The Administrator does not believe that such a result is likely. Yet it is almost certain that there will be some marginal effect, if only in cases where the size of the proposed development is slightly above the minimum size subject to review. A developer within an SMSA who intends to construct a project with an associated parking facility of approximately 1,000-car capacity is likely to cut parking lot size just enough to avoid review.

111. The final regulations were not promulgated until February 15, 1974.
113. Id. at 7273. Many environmentalists attacked the 180-day grandfather clause as violative of the court order as well as ill-conceived. See, e.g., EPA Hearings on Complex Source Review, Francisco, at 66 (Statement of Richard S. Gaines, American Lung Association), December 7, 1973 [hereinafter cited as EPA Hearings].
115. Id. at 7272 (1974).
116. An alternative method for avoiding review would be to move the proposed facility outside of an SMSA, thereby gaining the protection of a higher size cut-off. Widespread practices of this sort could lead to potential conflict with the requirement of no significant deterioration. See text accompanying notes 153-57 infra. See also On a
The more effective the review, i.e., the more difficult it is to get a permit, and the more demands for redesign are made by the reviewing agency, the greater this marginal effect will be. If it is very difficult to obtain permission to construct facilities, there will be a strong temptation to shave parking lot size substantially in order to avoid the review process. The limit on this reduction in parking lot size will only come when the associated parking lot becomes so small in relation to the facility it serves that customers are kept away by parking lot overcrowding. It is unwise to push developers toward this limit because congested parking lots produce proportionately greater emissions due to increased idling time and other undesirable traffic flow effects.

If developers do reduce the size of their proposed projects and increase their number, or if they move outside an SMSA, the regulations will encourage strip or dispersed development. Strip development is undesirable because it creates facilities which are accessible only by automobile, which provide fragmented services with the concomitant necessity of multiple trips, which use up more open land,117 and which typically create congested traffic patterns. As a result, such development can create added air quality problems which are far out of proportion to the number of additional parking spaces associated with it. This potential problem is part of the price paid for having a large review cutoff size and for using parking lot size as a measure; parking capacity does not directly measure the effects which are really at issue.118

The magnitude of this dispersal effect cannot accurately be predicted at present. It may be partially controlled by stricter state standards119 or by apparently moribund parking supply management regulations.120 The Administrator apparently intends to re-evaluate the problem when the results of the growth projections now being undertaken are available.121

Clear Day, supra note 44; Comment, VII: Air Zoning—A Land Use Model for Air Quality, 4 Ecology L.Q. 781 (1975) [hereinafter cited as Air Zoning].

117. Using more open land may result in an increase in vehicle travel by urban residents seeking recreation. It may also have the effect of diminishing the capacity of the local atmosphere to rid itself of pollutants. See Complex Source Evaluation, supra note 40.

118. See text accompanying notes 77-84 supra.


Even if the cutoff size does not directly promote strip development, it does almost nothing to control it. Areas of strip development typically consist of a large number of individual businesses, none of which has a parking lot anywhere near the 1,000-car capacity which would require review. Only a comprehensive approach which would aggregate such development will be adequate to control it fully.

(b.) *Will indirect source review limited to large projects make a substantial contribution to air quality maintenance?*

Complex source controls can be a useful tool for maintenance of air quality in two ways. First, review of a large portion of proposed construction could aid efforts to limit growth in threatened areas and direct it toward locations where it would represent less of a threat to air quality. Such an approach could also attempt to shape the pattern of growth toward a mix of facilities which would lessen the distance and amount of motor vehicle travel by residents and which would be more easily incorporated into mass transit systems. EPA's complex source review procedures will not cause such relocation. Though they will have some effect on patterns of development, only a small fraction of proposed construction will be reviewed.\(^1\) There will be no direct control over the location of most new construction.

Secondly, review of large projects could be used to affect indirectly the location and pattern of small projects. But such a strategy requires that complex source review be carried on in a manner that will mesh with long term growth planning and that will be cognizant of the potential of proposed projects for inducing associated growth.\(^2\)

The separation of complex source controls from the growth projections required as a part of state air quality maintenance plans is thus particularly unfortunate.\(^3\) It will mean that complex sources will be reviewed on an individual basis without full consideration of their area-wide effects on growth and air quality.\(^4\) Such a review will not be adequate to maintain air quality. Further measures will be necessary.

(2.) *The drawbacks of source-by-source review: accounting for induced growth*

In many cases the growth induced by a facility will have its own strong effect on air quality. A large place of employment or a major commercial development will often have more effect through the pattern of growth it induces than through the mobile source emissions di-

\(^{122}\) See notes 84, 98, and 108 *supra.*
\(^{123}\) See text accompanying notes 126-27 *infra.*
\(^{124}\) See text accompanying notes 134-52 *infra.*
\(^{125}\) See text accompanying notes 164-65 *infra.*
Such induced growth should be one of the primary concerns of the reviewing agency. But EPA at present intends to review only on a source-by-source basis. Consideration of such induced growth is thus excluded from the review process. And again, the political balance is changed. If residential, small commercial, and limited industrial developments are constructed without review because they do not meet the size criteria, they will generate such a powerful demand for associated large scale development that reviewing authorities will be hard pressed to deny permission.

These problems will be exacerbated by the Administrator's decision to forego control over the development of single family housing. Such projects have important effects as stimulants to further growth. In addition, since apartment developments with sufficiently large associated parking facilities will be reviewed, there will be at least a minimal incentive toward single family construction, which uses more land and which, because of its dispersed pattern, means more motor vehicle operation.

(3.) Failure to account for certain pollutants

EPA's substitute regulations require analysis of the impact of airports and very heavily travelled highway sections on levels of carbon monoxide, photochemical oxidants, and nitrogen dioxide. Highways bearing a somewhat less heavy traffic volume will be reviewed for carbon monoxide effects alone. Associated parking areas, whatever their size, also will be reviewed only for carbon monoxide emissions.

The limitation of the review program to motor vehicle related sources will provide little control of particulate emissions and almost none for $SO_2$. The fact that most projects to be reviewed will be tested only for carbon monoxide emissions means that little direct control will be exerted over hydrocarbons, nitrogen dioxide, or photochemical oxidants. Since these last three pollutants are produced in large amounts by motor vehicles, enforcement of a carbon monoxide standard

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126. See Complex Source Evaluation, supra note 40.
127. Final Substitute Regulations, supra note 9, 39 Fed. Reg. 7273-74 (1974). The inclusion of such housing has been urged by many commentators. See, e.g., EPA Hearings, supra note 113, at 66-67 (statement of Richard S. Gaines, American Lung Association). In view of the approach taken by the Amended Substitute Regulations, supra note 25, 39 Fed. Reg. 25292 (1974), it is questionable whether even large multiple-family residences would be reviewed. If, for example, a developer built ten adjacent apartment buildings, each with 100 parking spaces, the buildings might all be considered separate facilities and thus unreviewable. See text accompanying notes 88-93 supra.
130. See text accompanying notes 48-49 supra.
will, to the extent that it limits the amount of motor vehicle traffic, exert some control. But it is not clear that this will be adequate.\footnote{181}

The Administrator has justified the limitation to carbon monoxide analysis on the basis of a finding that techniques for predicting the effects on areawide oxidant levels of a single new source are effective only in the case of very large sources.\footnote{182} This puts the issue squarely. If the Administrator had required a comprehensive and areawide program of complex source review, the reviewing agency could have taken all existing and proposed facilities in an area together for purposes of review. The total impact on the area of projected development could then be measured in aggregate quantities large enough to allow photochemical oxidant analysis to be used effectively.\footnote{188} A source-by-source analysis, on the other hand, prevents effective control over photochemical oxidant problems.

(4.) \textit{The role of Air Quality Maintenance Plans}

It is clear, then, that present complex source control regulations are subject to a number of limitations: they provide only marginal control over pollutants other than carbon monoxide,\footnote{134} they are not designed to account for the effects of overall area growth,\footnote{135} and they apply to only a relatively small number of new sources.\footnote{136} Additional measures to assure air quality maintenance will therefore be necessary.

EPA is apparently relying on state Air Quality Maintenance Plans, which states are now preparing, to supply these additional measures.\footnote{137} They consist of three basic steps. First, states will be required to identify areas in which there is a threat to the maintenance of air quality standards and to designate those areas Air Quality Maintenance Areas (AQMA’s). Secondly, the states will analyze projected emission growth in these areas over the ten year period beginning in 1975. Finally, if the air quality maintenance portions of the state plans are to be approved, the states must adopt and submit “measures to in-

\footnote{131. The relationships among the various automobile-generated pollutants are very complex; areas with problems due to one pollutant are not always faced with problems from other pollutants.

The primary and secondary ambient air quality standards are set out in \textit{State Plans and Enforcement}, supra note 5.
\footnote{133. “(A)ir pollution impact on the \textit{regional} scale (but not in microscale detail) can frequently be based on the use of a simple atmospheric dispersion model, without significant loss of accuracy . . . .” Complex Source Evaluation, supra note 40, at 23.
\footnote{134. See text accompanying notes 128-33 supra.
\footnote{135. See text accompanying notes 126-27 supra.
\footnote{136. See text accompanying notes 122-25 supra.
\footnote{137. Final State Plan Regulations, supra note 9, 40 C.F.R. §§ 51.10-.11 (1973).}
sure that projected growth and development will be compatible with maintenance of the national standards.'"138

EPA has developed a set of guidelines for identification and designation of AQMA's.139 States will begin by identifying Standard Metropolitan Statistical Areas (SMSA's) within their boundaries. Present air quality levels and projected growth rates will be used to predict the potential maintenance problem in the SMSA on a pollutant-by-pollutant basis. Present air quality and growth rates will also determine whether any areas within the SMSA should be excluded from the AQMA and whether any adjoining areas not within the SMSA should be included in the AQMA.140

Once the AQMA is designated, growth rates of various individual industries, as well as overall population and motor vehicle growth estimates, will be used to project emission levels to 1985. These projections will be based on an assumption that future growth will be directed to those areas which present the greatest threat to air quality of all areas open to development under existing land use plans.141

Finally, states will be expected to develop plans which will provide for air quality maintenance through 1985 in the identified AQMA's. EPA has indicated some of the provisions such plans will contain. The first of these measures is revision of local land use and transportation plans where they are presently "incompatible with air quality maintenance."142 Other strategies will include emission allocations, transportation controls, and fuel and energy conservation measures.143 Finally, plans will provide for the coordination of air quality maintenance with other environmental planning.144

There are a number of weaknesses in the Air Quality Maintenance Plan requirements. The issue of nondegradation is not addressed.145 SMSA's do not include all areas in which serious air pollution problems exist, and the inclusion of areas outside SMSA boundaries seems by no means assured—especially where the threatened areas are not contiguous to SMSA boundaries.

Nevertheless, the plans are a first attempt at a comprehensive integrated air pollution control strategy. Unlike earlier measures, the plans are not single steps which are expected to provide only a part

138. Id. §§ 51.12(e)-(h) (1973).
139. EPA, GUIDELINES FOR DESIGNATION OF AIR QUALITY MAINTENANCE AREAS, OAQPS 1.2-016 (1974) [hereinafter cited as DESIGNATION GUIDELINES].
140. Id. at II-2.
141. Id. at I-5.
142. Id.
143. Id. at I-6.
144. Id.
145. See text accompanying notes 153-61 infra.
of the necessary controls. Rather, they are required to provide, in and of themselves, all the necessary remaining steps to maintain air quality at the level required by the Act.

But this strategy has been a long time coming. Air Quality Maintenance Plans need not be submitted until June 1975.146 Their effect will not be felt for some time after that date. Yet the Act, at the time of its passage, seemed to require the attainment of primary standards by May 1975,147 and it has required since its passage in 1970 that state plans contain "such other measures as may be necessary"148 to attain and maintain the air quality standards.

In this sense the Air Quality Maintenance Plans provide a convenient catch basin for the shortcomings of existing EPA programs. Present programs can be continued without the increased stringency which would be necessary if those programs were to reach the goals of the Clean Air Act; the difference between what those programs are likely to achieve and what the Act requires can be explained by saying that it is covered by the provisions of the Air Quality Maintenance Plans.

Complex source regulation illustrates this point. If the Administrator had required review of a broad range of new sources as envisioned in the first EPA proposal149 such a review process could have been the basis of a far-reaching program of air quality maintenance measures. They might have been effective enough so that only minimal additional control measures would have been necessary. But the subsequent narrowing of the complex source measures insured the necessity of additional measures. These were deferred to the Air Quality Maintenance Plans.

EPA has justified this strategy partly on the grounds that it had insufficient personnel to review a large category of new sources.150 It was clear that at least some states would fail to submit or enforce such

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147. Section 110(a)(2)(A)(i) of the Act, 42 U.S.C. § 1857c-5(a)(2)(A)(i) (1970), requires state plans to provide for the attainment of primary ambient air quality standards within three years of plan approval. If state plans had been approved in accordance with the Act's timetable, that three year period would have expired in May 1975. But the dates on which plans were actually approved fell substantially after the date when the Act required EPA to accept or reject them. Thus there is a continuing controversy over the date when state compliance with primary standards will be required. It might be interpreted as three years from the date when plans should have been approved or three years from the date when they actually were approved. See State Plans and Enforcement, supra note 5; Implementing the Clean Air Act in Los Angeles, supra note 5.
measures and that EPA would be forced to do the review with its own staff.

The deferral of stronger controls to the growth plan regulations may ease this burden. If the states develop adequate plans as part of their growth analyses, the need for EPA enforcement will be avoided. The enforcement burden would rest initially on the states.151

If the states do not formulate sufficient control strategies, however, EPA will be back in the position of having to promulgate and enforce its own substitute control strategies. A substantial amount of time will have been lost. Early indications of the course that the states are likely to follow are not encouraging.152

(5.) Complex source review and the requirement of no significant deterioration

The failure of EPA's complex source regulations to take account of induced growth or adequately to control strip development and the limitation of the air quality maintenance plans to areas with poor present air quality raise the question of whether these regulations will work at odds with EPA's duty to prevent significant deterioration of air quality in areas which presently have clean air.153 Several aspects of complex source review may be in conflict with this duty.

First, there are several ways in which complex source regulations may tend to disperse growth from presently developed areas, causing deterioration of air quality in presently undeveloped areas. The limitation of the review to large projects may cause a proliferation of small developments which will sprawl out into present clean air areas.154 Further, the larger size cutoffs outside SMSA's will encourage developers to locate there to avoid review. Since Air Quality Maintenance Plans will only be in effect in presently developed areas,155 they may also have the effect of dispersing growth to nonregulated, undeveloped areas. Indeed, EPA apparently intends them to have this effect.156

151. However, EPA would still be required to assume enforcement responsibility if it appeared that the states were not adequately enforcing their plan provisions. Clean Air Amendments § 113(a)(2), 42 U.S.C. § 1857c-8(a)(2) (1970).
152. EPA officials estimate that at most 36 states will develop their own plans and that the number may be substantially less. Author interview with EPA staff.
154. See text accompanying notes 115-21 supra.
155. See text accompanying notes 139-41 supra.
156. EPA guidelines for designation of AQMA's refer to "centralized locations of new sources of emission" as "the least desirable pattern of development." DESIGNATION GUIDELINES at I-5. Though a dispersed pattern of development creates a lower concentration of emissions at any one location than centralized development, it results in more total emissions in the area as a whole. See Air Zoning, supra note 116.
Second, regardless of whether complex source regulations actually encourage development of present clean air areas, with the accompanying deterioration of air quality, they do very little to control it. Highways are not reviewed at all outside SMSA's. Airports will be reviewed, but the large size criteria insure that only a very few airports will be affected. The only broadly applicable review outside SMSA's will be the review of facilities with associated parking areas, but the limitation of this review to new projects with parkings areas of 2,000 cars or more or modifications adding 1,000-car capacity will mean that a significant number of intermediate sized projects will escape review altogether.

EPA has attempted to explain away this problem by saying that the purpose of complex source review is not to prevent deterioration of air quality in present clean air areas but only to insure attainment and maintenance of the national ambient standards, and that because the air in nonurban areas is generally cleaner than in urban areas, it is therefore "not necessary to review the same size sources in nonurban areas as in urban areas." But this avoids the issue: if complex source regulations have the effect of channeling growth to clean air areas, those areas will suffer deterioration of air quality unless other steps are taken to exert countervailing pressures.

In fact, despite the Administrator's effort to segregate complex source review from the prevention of significant deterioration, it is probable that the language of the complex source regulations requires that they be used to prevent significant deterioration. EPA must disapprove the proposed construction or modification of a complex source if it will "cause a violation of the control strategy of any applicable state implementation plan." The court order in Sierra Club v. Ruckelshaus requires state implementation plans to include affirmative steps to prevent significant deterioration. Such steps may be viewed as control strategies, the violation of which would require EPA to disapprove a complex source. Yet the attainment of this goal will be frustrated by the fact that the nondegradation regulations will be applicable to only two pollutants—sulfur dioxide and particulate matter.

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159. It should be noted, however, that EPA's Guideline Regulations define "control strategy" as those measures applied to achieve attainment and maintenance of a national standard. 40 C.F.R. § 51.1(n) (1973). "National standard" is defined to cover only the primary and ambient air quality standards, and thus as written does not cover any national standard which EPA might promulgate pursuant to Fri v. Sierra Club 412 U.S. 541, 5 ERC 1417. 40 C.F.R. § 51.1(e) (1973). However, that decision is properly read as expanding the definition of "control strategy" to include those measures necessary to prevent significant deterioration.
Neither of these pollutants is produced in significant quantities by automobile travel, the sole focus of complex source regulations. Thus, if complex source controls have the effect of dispersing automobile related sources to clean air areas, nothing in the non-degradation regulations will compensate for this effect.\footnote{161}

(6.) Are SMSA’s appropriate units?

Additional problems may arise from EPA’s decision to use Standard Metropolitan Statistical Areas as the regions in which the stricter standard for review will apply.\footnote{162} SMSA’s are creations of the census; their boundaries are not set with reference to air quality. To the extent that they reflect areas of high population density, and to the extent that high population density is correlated with high levels of emission, they may have some usefulness in identifying areas of greater pollution concentration, but this identification will not be accurate in every instance. It is possible that some SMSA’s may now have sufficiently good air quality to make it more appropriate to classify them with non-urban areas in the process of devising air quality strategy. It is even more likely that there are areas outside SMSA’s where for various reasons air quality standards are threatened. It would be more appropriate to apply the stricter standard to such regions.

Such considerations are especially important in the case of complex source review because review is made for the purpose of long term maintenance of air quality, and its effects are felt through its impact on the nature of growth and development over a period of time. Much of the future growth and development in urban centers will occur on the fringes of those areas. These fringes may lie outside SMSA’s.\footnote{163} Fringe development may well be more damaging to air quality than centralized development. The density may be too low for efficient service by mass transit. Such sprawling strip development will thus almost certainly produce more emissions per resident than centralized development and is probably more wasteful of energy resources.

The use of the SMSA regions is an incentive to develop these fringe areas because they will, if they lie outside SMSA boundaries, be subject to less stringent review requirements. Though economic intuition tells us that some such effect will exist, there is no way of quantifying the incentive to locate outside urban areas since its magnitude depends, \textit{inter alia}, on the severity with which the regulations are en-

\footnote{161. The failure of the non-degradation regulations to encompass all pollutants for which there is a national standard is probably a violation of the court order in \textit{Sierra Club v. Ruckelshaus}. \textit{Id.}, text accompanying notes 53-67.} \footnote{162. Final Substitute Regulations, \textit{supra} note 9, 39 Fed. Reg. 7277 (1974).} \footnote{163. For a discussion of the suburban sprawl phenomenon, see \textit{Air Zoning}, \textit{supra} note 116, text accompanying notes 2-4.}
forced inside SMSA’s—a factor with which we have as yet had no experience.

At best, then, the SMSA is imperfectly designed to measure the real potential for pollution damage in an area. At worst, use of this measure might be counterproductive in that it exempts some of the most critical future problem areas from the more stringent standards. It is possible that SMSA’s are so unrelated to air quality considerations that the Administrator has exceeded the scope of his discretion or the spirit of the holding in the First Circuit case of NRDC v. EPA164 by their use in this context.

(7.) The need for integrated planning

In short, complex source control will face serious problems until it is part of a broad land use control program. Such integration would not be without difficulty because the Clean Air Act has no provision for balancing clean air goals against other desirable social objectives. Comprehensive land use control would necessarily involve some such tradeoffs.

But a program of this sort would, if correctly structured, make the attainment of clean air goals more likely. It would have the further benefit of easing the regulatory burden on the landowner or developer, who would be able to secure all needed permits from a single authority.

Comprehensive land use control statutes are presently being considered at both state and national levels. Integration of complex source control into such a framework would make it a powerful tool for maintenance of air quality.165

164. In a suit brought by NRDC against EPA, the First Circuit was called upon to consider the appropriateness of EPA’s classification of the Metropolitan Providence Interstate Air Quality Control Region as Priority III for photochemical oxidants and carbon monoxide on the basis of EPA’s blanket determination that “in the absence of measured data to the contrary . . . any region containing an area whose 1970 ‘urban place’ population as defined in the U.S. Bureau of Census, exceeds 200,000 will be classified Priority I. All other regions will be classified Priority III.” 40 C.F.R. § 51.3(b) (2) (1973). Although the court was solicitous of the Administrator’s “need to tackle the national problem in a manageable way,” it nonetheless ordered EPA to provide us with a detailed statement of its reasons for adopting 40 C.F.R. § 51.3(b)(2), what efforts have been made and are being made to collect data concerning photochemical oxidants and carbon monoxide levels in the [Rhode Island Regions], whether or not adequate data is now available, and any other information which the E.P.A. considers might be helpful to this court in reviewing the question.

NRDC v. EPA, 478 F.2d 875, 881-82, 5 ERC 1879, 1881-82 (1st Cir. 1973). Subsequent to the court’s decision, EPA reconsidered its designation of the Providence AQCR as Priority III and concluded that its photochemical oxidant and carbon monoxide problems were severe enough, despite its population of under 200,000, to warrant a reclassification to Priority I. Reclassification of Rhode Island Air Quality Control Region; Correction, 38 Fed. Reg. 34325 (1973).

165. See the statement of EPA Administrator Russell Train before the National
EPA'S STATUTORY AUTHORITY TO REQUIRE COMPLEX SOURCE CONTROLS

Although a discussion of the constitutional issues raised by the Clean Air Act is beyond the scope of this Comment, a number of statutory and regulatory issues raised by complex source controls may fruitfully be considered.

1. The Requirement that Complex Source Controls Be Included in State Plans

The Clean Air Act requires that state implementation plans include certain specified measures for air pollution control. In instances where these specific programs are not adequate, the Act requires the institution of "such other measures as may be necessary . . . including, but not limited to, land-use and transportation controls." But the initial choice of these other measures rests with the states.

State plans must, of course, be submitted to EPA for review. If the Administrator determines, inter alia, that the state plan is adequate to attain and maintain national ambient air quality standards, he is required to approve it. If the plan is inadequate, the Administrator must disapprove it. If the state does not submit curative proposals within 60 days, EPA is required to promulgate a substitute plan for the state.

In NRDC v. EPA the court found that the Administrator had failed to fulfill his statutory duty to determine whether each state implementation plan at issue was adequate. Pursuant to the court order, the Administrator reviewed each plan separately and determined that all plans were inadequate to maintain the standards. At that point, EPA was required by both statute and court order to allow states a specified period in which to submit curative plans. States had at their


166. The Clean Air Act requires each state to adopt and submit a plan "which provides for implementation, maintenance and enforcement" of national primary and secondary ambient air quality standards. Clean Air Amendments § 110(a)(1), 42 U.S.C. § 1857c-5(a)(1) (1970). The Administrator is required to approve or disapprove such state implementation plans based on a number of statutory criteria. Finally, the Administrator is authorized "to prescribe such regulations as are necessary to carry out his functions" under the Act. Id. § 301(a), 42 U.S.C. § 1857g(a) (1970).

167. The Administrator, if all the requirements of the Act are met, "shall approve such plan, or any portion thereof . . ." Id. § 110(a)(2), 42 U.S.C. § 1857c-5(a)(2) (1970) (emphasis added).


169. 475 F.2d 968, 4 ERC 1945 (D.C. Cir. 1973).

disposal a variety of techniques with which to insure that air quality would be maintained once the standards were reached. Presumably, if the measures which a state chose to use were adequate to maintain the standards, the Act would require the Administrator to approve them; he would not have the authority to disapprove an adequate state plan merely because he might prefer a different measure. Yet EPA in effect took this tack. States were told in advance that unless their plans included complex source controls, EPA would disapprove them, even if they contained alternative measures adequate to insure air quality maintenance. To support such a step, EPA has argued that these measures are in fact necessary in all areas and that no combination of other reasonably available steps can successfully maintain standards without a complex source review procedure.

2. Promulgation of Nationwide Complex Source Regulations

Since the Administrator is required to approve or disapprove plans on a state-by-state basis, a strong argument can be made that he must promulgate substitute plans for each individual state, based on specific findings about the particular conditions in that state. Following this line of argument, EPA could not promulgate uniform national standards unless it found that air quality problems are at least roughly equivalent in all affected areas. EPA has admitted that it has made no such findings.

There are two answers to this argument. The requirement of maintenance of standards is meant to apply to the indefinite future, and it is undeniable that standards may someday be threatened in any area if development goes unchecked. Complex source regulations may be

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171. See note 167 supra.
173. The limitation of complex source review to motor vehicle related sources makes it similar to some transportation control measures. A state might well contend that its transportation control plan achieved all the objectives of complex source review and that such a review was therefore unnecessary. The state of Arizona has filed a petition for review in the Ninth Circuit based on this contention. Telephone interview with David Healey, Environmental Protection Agency Region IX, April, 1974. The Administrator believes that § 110(a)(2)(B) of the Act, 42 U.S.C. § 1857c-5(a)(2)(B) (1970), confers sufficient authority on EPA to support this step. Final State Plan Regulations, supra note 30, 38 Fed. Reg. 15385 (1973).
174. Support for this argument can be found in the hearing procedures required by the Act. If a state held no hearing on a plan which is subsequently disapproved by EPA, the agency is required to hold hearings in that state before substitute regulations are promulgated. Clean Air Amendments § 110(c), 42 U.S.C. § 1857c-5(c) (1970). Though such a hearing is "legislative" and the agency is thus not bound to promulgate its rules on the basis of information there developed, it may still be argued that the requirement that a hearing be held in each state was an expression of congressional desire to have each state's problems heard and resolved on an individual basis.
viewed as a reasonable measure to meet this eventuality. Secondly, even if a state-by-state analysis is required, the regulations may still be valid on the ground that they represent the minimum that is necessary to insure maintenance in even the least polluted areas.178

D

ADMINISTRATION OF COMPLEX SOURCE CONTROLS

The promulgation of the federal substitute regulations raises a series of important issues about how they will be put into effect and which governmental entities will conduct the review they require. In default of enforcement by anyone else, EPA will undertake the task.177 Yet EPA's resources are limited. If the agency must itself perform all the review required by the regulations, its resources may be stretched beyond the breaking point. Even if the agency can find the resources for such a task, it would result in cursory examination of many important projects. A number of alternative possibilities reduces the likelihood that the entire burden will rest on EPA.

1. Submission of State Plans

If states have submitted adequate plans before the effective date of the substitute regulations,178 the Administrator has announced his intention to approve such plans and to make the substitute requirements inapplicable to those states.179 This result seems to be required by section 110 of the Act.

A number of states have submitted plans which are undergoing review. A few have already been approved.180 If they are not approved, section 110(c)(3) of the Act would seem to allow the states a 60 day period to cure the plan's deficiencies before the substitute regulations are made applicable in place of the plan.

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176. But if EPA's argument is that the complex source regulations which it has promulgated constitute some minimum required in even the cleanest areas, the regulations must almost per se be inadequate in the dirty areas. Additionally, assuming that EPA has the statutory authority to require complex source regulations, it is unclear whether states must rely primarily on complex source review as a maintenance measure or whether it can be used as a supplement to other measures which bear the main burden of maintaining air quality.


178. The Final Substitute Regulations, supra note 9, were effective July 1, 1974.


180. As of February 15, 1974, fourteen states had submitted plans containing complex source review procedures. The Florida and Guam plans had been approved, while the remainder were under study. Id. at 7271.
It is not clear what will happen if states submit plans after the effective date of the regulations. Clearly such a plan must be accepted to the extent that it is more stringent than the federal proposals. But it could be argued that nothing requires the Administrator to approve a tardy plan, even if adequate, if EPA feels for any reason that its own proposals are superior or that the shift from one regulatory scheme to another would result in delay in transition.

On the other hand, so long as state proposals meet the requirements of the regulations and can be put into effect without undue delay, there seems to be no reason why the Administrator should not approve them. Indeed, EPA would be unwise to refuse to delegate an authority, the exercise of which so strains its own resources. Section 110(a)(3) of the Act may require EPA to approve revisions in state plans so long as the revised plan meets the applicable requirements of the Act and subsidiary regulations. It would thus seem fruitless to deny approval of a state proposal which would have to be accepted if resubmitted as a revision.

2. Delegation of Review Authority

Even in states which do not submit their own proposals, EPA hopes to relieve itself of the burden of review by delegating the authority to enforce the substitute regulations to state or local agencies. EPA believes that state agencies which accept such authority will have the power to enforce the regulations under the aegis of federal authority without any specific state statutory authority. This would create some difficulty, especially if the requirements of the review procedure are in conflict with existing state law as will be the case in many instances.

An additional problem will arise if EPA attempts to delegate this authority directly to local governmental agencies where states refuse to accept it. EPA apparently intends to take this tack in at least some places.

Finally, it is possible for the state and federal governments to reach accommodation even where states resist the requirement that they review sources as provided in the federal plan. For example, if the state has acted on its own to review some, but not all, of the sources

184. Id. at 7275.
185. For example, EPA apparently intends to delegate review authority for the San Diego region directly to local air pollution control agencies. Author interview with EPA staff.
requiring review under the federal approach, EPA may limit its own review to the sources not covered by state procedures.

3. Interagency Cooperation

The regulations governing state plans allow delegation of review authority to either local land use agencies or air pollution control agencies. If the land use agency is the review agency, it must consult with the air pollution control agency and vice versa. Yet it is clear that consultation is far different from decisionmaking authority. If the goals or orientation of the local land use control agency and the air pollution authority are in conflict, such consultation may turn out to be strictly pro forma. The net effect of the review procedure may depend on which agency has the ultimate power and what approach prevails. If enforcement is inadequate at the local level, the Act gives EPA and the state the authority to insure that the Act's requirements are followed. But as a practical matter, local agencies may make many decisions which ultimately are not as effective as others in insuring air quality maintenance. Obviously not all such decisions can be adequately monitored by EPA.

The possible delegation of review authority to local agencies presents a potential for conflict with the regional orientation of the Act. Congress recognized that many air quality problems could not be solved by individual local agencies and therefore required the institution of regional authority over air pollution control. Delegating review authority to local agencies, even where they are required to consult regional authorities, appears to undercut this regional focus.

4. The Review Process

The mechanics of a program's operation may in many instances be a more reliable guide to its ultimate effects than its stated objectives. Thus an examination of the information requirements and review pro-

189. The regulations require notification of other local agencies within an air quality region when applications for permission to construct or modify are received. Final Substitute Regulations, supra note 9, § 52.22(b)(8)(iii), 39 Fed. Reg. 7278 (1974). This minimal provision will no doubt have some beneficial effect, but it is far from the integrated regional planning envisioned by the Act. If the local land use agency is to be the final arbiter of project approval, serious problems may result. In many regions, only a small number of projects may be approvable if standards are to be maintained. Few local jurisdictions seem likely to halt construction of projects within their own boundaries in order to allow projects elsewhere to proceed. EPA can hardly mediate all the disputes which are likely to result.
a. Information to be Submitted with Applications

The information which applicants must submit for permission to construct or modify complex sources is important both because the analysis which may be undertaken is dependent on available data and because the information which EPA requires may indicate the manner in which the agency intends to operate the review system. The regulations specify certain information which all applicants must provide and authorize the reviewing agency to require additional information where necessary.¹⁰⁰

(1.) Facilities with associated parking areas

Applicants for permits to construct or modify facilities with associated parking areas must furnish several types of information. First, they must submit estimates of the present traffic volumes, peaking characteristics, and service levels at intersections on access roads within one quarter mile of the proposed site boundary.¹⁰¹ In addition, estimates of the same quantities during the first year after the site becomes fully operational must be submitted.¹⁰² Such a requirement has the benefit of requiring analysis of all existing traffic, new traffic generated by the source under review, and new traffic which will be generated by other projected development in the area. Thus some consideration of area-wide development patterns can enter into the analysis. This consideration will, however, be constrained by the limitation of the estimate to a one year period. It ill serves the goal of long term maintenance to fail to consider projected development over the next several years which may well have the effect of creating the congested traffic patterns which this review is designed to prevent. It is especially important to take this pattern into account where many of the additional proposed developments may be stimulated by the source presently under review. It is not clear how this is to be done. If projections are required for no more than one year, and if additional facilities—even where planned and constructed by the same developer—are to escape review at the time they are built,¹⁰³ a large gap in the regulatory framework is appar-

¹⁰³ In the Amended Substitute Regulations, supra note 26, 39 Fed. Reg. 25294 (1974), EPA takes the position that a shopping center developer who plans to add and does add major new components to his center at a date some time after the initial construction is not required to go through the review process again when the added facili-
ent. Even when the additional facilities are not a planned add-on by the original developer, however, there are situations where the construction of a particular facility will provide very strong incentives for additional construction, each fragment of which may be too small on its own to require review.

There is another effect which has the potential for even more damage; the required information is limited to a one quarter mile radius, even though intersections and access roads outside that radius may often be overloaded by the new project.

The second type of information which developers must provide consists of estimates of the maximum number of vehicle trips to and from the facility during one hour, eight hour, and twenty-four hour periods during the first year of operation.\textsuperscript{194} While this will provide useful additional guidance, it raises at least two new questions. If developers are required to make such estimates for use in the review process, it does not seem as difficult as the Administrator has suggested\textsuperscript{195} to set the review cutoff size in terms of induced vehicle trips, with all the advantages that would entail.\textsuperscript{196}

In addition, concentrating on the number of induced vehicle trips in conjunction with the required estimates of local traffic flow characteristics may cause review to focus too narrowly on the locale of the proposed development. Areawide air quality problems, especially involving photochemical smog, depend much more on how many vehicle miles are traveled than on how many trips are induced. If the review process is limited to insuring that intersections and access roads are not overloaded and avoids the issue of how many additional vehicle miles are being traveled in the entire region, the effects of review may be weakened or even in some respects counterproductive.\textsuperscript{197}


\textsuperscript{195} \textit{Id.} at 7271.

\textsuperscript{196} The difficulty of making such projections was one of the rationales for the adoption of parking lot size as the review cutoff criterion. For a discussion of some of the defects of the parking lot size criterion, see text accompanying notes 77-83 \textit{supra}.

\textsuperscript{197} Since the amount of photochemical oxidants emitted varies directly with distance traveled, while carbon monoxide emissions are higher per mile when cars are operated at a low speed, a plan to reduce carbon monoxide emissions by smoothing and increasing the velocity of traffic flow will do little to solve the photochemical problem. If the reduced traffic congestion induces people to drive more miles, the photochemical problem may actually get worse. The required information concerning existing or pro-
hard to imagine that some proposed development may actually decrease the total amount of vehicle miles traveled in an area by providing more convenient and centralized facilities. It is not clear how the reviewing authority will account for this possibility.

(2.) **Airports**

The information requirements for proposed airport construction and modification offer a more comprehensive picture for review purposes. In addition to the requirements imposed by virtue of the associated parking area review as outlined above, and projected air traffic volume at intervals over ten years, the regulations require "a description of the commercial, industrial, residential, and other development that the applicant expects will occur within three miles of the perimeter of the airport within the first five and the first ten years after the date of expected completion." The latter requirement not only allows for consideration of the impact of induced growth but also allows greater attention to be given to the air quality effects in the region as a whole.

(3.) **Highways**

In contrast to the airport requirements, the information requirements for highways do not seem oriented toward either the problem of growth induced by a new highway or the problem of areawide emissions analysis. They concentrate exclusively on traffic volume and speed.

b. **Design Review**

Most of the early pronouncements on the subject of complex source controls make no mention of design review. The final EPA substitute regulations do contain a system of review contemplating analysis of proposed mass transit going to the site may alleviate the problem since this information is oriented toward lowering the total amount of vehicle traffic in the area. Final Substitute Regulations, supra note 9, § 52.22(b)(3)(i)(j), 39 Fed. Reg. 7277 (1974).

198. See text accompanying notes 191-197 supra.


200. See text accompanying notes 153-56 supra.

201. See text accompanying notes 165-66 supra.

202. Final Substitute Regulations, supra note 9, § 52.22(b)(3)(iii)(b), 39 Fed. Reg. 7277 (1974). The only important requirement not directly related to traffic flow is that location and height of buildings along the right of way must be indicated. Id. §§ 52.22(b)(3)(iii)(c)-(d), 39 Fed. Reg. 7277 (1974). This requirement, however, is less useful for creating an areawide growth projection than it is for calculating pollutant dispersal rates since building height and location are significant in determining whether pollutants disperse or become entrapped.
ysis of the design and certain other characteristics of the parking areas of proposed facilities in order to minimize their quality impact. To facilitate this review, additional information must accompany applications.203

To make design review effective, the regulations explicitly provide authority for the reviewing agency to condition approval on the developer's taking certain steps. He may be required to make binding commitments to offer mass transit incentives, to improve roadways, or to follow certain rules in the operation of the facility.204

Most of the design modifications contemplated are oriented toward faster vehicle flow and reduction of congestion. While this may be beneficial, too much emphasis on review of the design of isolated projects may obfuscate more important problems. Very few of the vehicle miles traveled to and from a facility are traveled in the parking lot and on the immediately adjacent access roads. While congestion in the parking lot and surrounding area may create a severe localized carbon monoxide problem, this will only be a small part of the total emissions increase attributable to the facility.205 To the extent that design review distracts from these larger problems it will be counterproductive, especially in view of EPA's admittedly limited manpower.206

c. Criteria for Approval

Applications to construct or modify highway sections large enough to require photochemical oxidant analysis207 or to construct or modify airports will not be granted if such modification or construction would delay the attainment of a national standard for carbon monoxide, photo-


204. In addition, the developer may be required to undertake no future modifications without EPA approval. Id. §§ 52.22(b)(9)-(10), 39 Fed. Reg. 7279 (1974).

205. A control strategy aimed at limiting automobile emissions by controlling traffic flow at access points to new facilities will not aid very much in achieving energy conservation goals. Operating cars at more efficient speeds saves some energy, but this can easily be offset by an increase in the number of vehicles on the road and the increased distances they travel. A strategy concentrating on the reduction of automobile travel, on the other hand, will save more energy. It is also more consistent with an area wide, integrated approach to air pollution control. In an era when pollution control efforts are criticized for being in conflict with energy production and conservation, it is appropriate for EPA to emphasize the energy saving facets of its air pollution control program.


207. That is, new highway sections with an anticipated average annual daily traffic volume of 50,000 or more vehicles within ten years of completion or modifications adding a daily volume of 25,000 within the same period. Id. § 52.22(b)(6)(ii)(b), 39 Fed. Reg. 7278 (1974).
chemical oxidants, or oxides of nitrogen beyond the required date or would cause a violation of those standards after the attainment date has passed. Applications to construct or modify facilities with associated parking capacity of the requisite size or highways of a size that requires only carbon monoxide analysis will be disapproved if the new development would prevent attainment or maintenance of the national standard for carbon monoxide. In addition, no permits will be granted to facilities which would violate a control strategy of an applicable state implementation plan. Even if the analysis done by the reviewing agency is based on sufficient data and uses techniques appropriate to take most of the effects of the proposed development into account, a number of difficult problems remain.

If a proposed facility does not alone cause national standards to be exceeded, important decisions about its approval must be made. If the aggregate of proposed construction in an area would directly threaten national standards even after each project has been designed to reduce associated emissions to a minimum, some weighing of the relative social desirability of the competing projects must be undertaken. Air pollution agencies may not be equipped to make such decisions. This may argue for delegation to local land use agencies, as the regulations now permit.

Similar decisions must be made, even if the aggregate of presently proposed projects will not directly threaten maintenance of air quality. Unless EPA intends to approve all projects on a first-come, first-served basis, it will have to decide how much of the margin between present

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208. See note 147 supra.

209. Included would be new highways with an anticipated annual average daily traffic volume of 20,000 vehicles or more or modifications increasing volume by more than 10,000 in the same period. Final Substitute Regulations, supra note 9, §§ 52.22(b)(2)-(d), 39 Fed. Reg. 7277 (1974).


211. A sufficient data base would include information which is not specifically required by the regulations, such as traffic patterns over a wide area, emissions data in the affected region as a whole, the previous uses of the developing area, and information on growth patterns in the area.

212. Such effects include induced growth, discussed in text accompanying notes 126-127 supra, as well as dispersion and receptor effects. A facility may have major effects on the rate at which pollutants disperse in the air. It may also increase the pollutant concentrations to which people are exposed by attracting them to heavily polluted areas. Such effects could profitably be considered by planning authorities.

213. EPA may recommend such steps as part of the design review process incorporated in the Final Substitute Regulations, supra note 9, 39 Fed. Reg. 7275 (1974). See text accompanying notes 203-06 supra.

214. Final State Plan Regulations, supra note 30, 40 C.F.R. § 51.18 (1973). But the problems of deciding among competing projects may be even greater if these projects are in several different political jurisdictions within an air quality region. See Testimony of Chairman Richard Rypinski of the San Diego Comprehensive Planning Organization, EPA Hearings, supra note 113.
air quality and minimum standards\textsuperscript{215} can be appropriated by a single project or group of projects.\textsuperscript{216} It has been suggested that an EPA decision denying approval could be subject to attack if the sole ground of disapproval were the agency’s desire to preserve a sufficient margin of air quality to allow it to approve as yet unspecified future projects.\textsuperscript{217} However, the permission to the states to adopt control strategies would seem to carry with it the power to disapprove development which does not itself threaten standards but may be part of a pattern threatening the standards in the long run.

One solution to this problem is an area review and projection.\textsuperscript{218} If EPA were able to determine how much additional development an area could withstand without threatening national standards, it could notify local land use agencies of the size of the margin which they would be free to use. The local agencies would then make the decision about which competing projects to allow. The EPA role would be limited to assuring that the amount of construction permitted remained within the margin and denying permits when the margin was reached.

**CONCLUSION**

The complex source control program illustrates the difficulties that are being encountered in the implementation of the Clean Air Act. As the agency charged with translating the Act’s provisions into working air pollution control efforts, EPA is faced with the fact that general public and congressional support for clean air wavers when specific measures to achieve that end are proposed.

The problem may be that present living patterns are not reconcil-

\textsuperscript{215} It is unclear exactly what these minimum standards consist of. It may be that development will be allowed until air quality deteriorates to the secondary standard. It may also be that no “significant deterioration” will be permitted. See On a Clear Day, supra note 44.

\textsuperscript{216} It is not clear when a group of buildings or installations will be considered to be a single facility for review purposes and when they will be considered individually. The Administrator’s attempt to clarify the situation by dropping the language “or combination thereof” from the Final Substitute Regulations, supra note 9, 39 Fed. Reg. 7274 (1974) does not fully answer the question. Neither do the clarifying changes in the Amended Substitute Regulations, supra note 26, 39 Fed. Reg. 25292 (1974). Much of the decisionmaking will necessarily take place on a case-by-case basis. Id. at 25295. Several possibilities exist. Facilities might be considered separate and thus not to be reviewed unless each alone met the size criteria; facilities might be considered to be modifications of already completed structures and thus to be reviewed if they met the modification size criteria; or facilities might be considered part of a continuous construction process, and thus be considered as an aggregate in determining whether review is warranted. See notes 92, 127, 193, and accompanying text supra.

\textsuperscript{217} Land-Use and the Clean Air Act, supra note 34, 3 Ecology L.Q. 261-64 (1973).

\textsuperscript{218} 40 C.F.R. § 51.18(a) (1973). See also 40 C.F.R. § 51.18(b) and text accompanying note 65 supra.
able with air quality adequate to protect public health and welfare. If this is the case, important changes in the patterns of our communities, our economic life, and our daily habits must come before air pollution can be controlled. The changes are bound to affect some of us adversely. Though most people are in favor of controlling air pollution, no one wants to be singled out as the one who must bear the burden of change.\(^2\)

The Clean Air Act directs that such important changes in our living patterns be made. But the generalized support for change expressed by the Act has not been translated into support for specific control measures. In the absence of popular consensus, those charged with implementing the Act are unlikely to push for full compliance with the letter of the law. They are likely to use all of the slack built into the legislative framework\(^2\) in order to avoid being put in the position of unilaterally dictating massive social change.

Countervailing pressures, such as those exerted by litigious environmental groups, will result in some enforcement measures stronger than those the agency would take on its own. But they are unlikely to push EPA to the point of full compliance with all of the Act’s optimistic timetables and goals.

An agency faced by these countervailing pressures would be likely to respond in several ways. First, it would be likely to resist suggestions for development of sweeping regulatory schemes which would involve major social dislocation. Imposition of such a regulatory scheme requires a broader political base than most agencies are blessed with. Second, if forced to take strong steps, the agency would probably be tempted to announce plans much broader than those it intended eventually to adopt. Such a course of action could defuse opposition to somewhat milder measures brought forth later. Finally, since opposition to the regulatory scheme would most likely focus on specific portions of the program, the agency might well lose touch to some extent with the larger issues presented by the program during the debate over specific problems. All of these phenomena are present to some degree in the history of complex source regulation.

In the enforcement of the Clean Air Act, various proposals have been advanced as strategies for pollution control. Each set of proposals, even if initially broad enough to reach the desired air quality goals, has been pared down in the face of criticism to the level where yet more programs and strategies will be necessary to achieve the required result. This slow whittling away at the problem may result in

\(^{219}\) For a discussion of this political problem, see Implementing the Clean Air Act in Los Angeles, supra note 5.

\(^{220}\) For a discussion of the various extension and variance provisions in the Act, see State Plans and Enforcement, supra note 5, text accompanying notes 157-200.
some progress. It may also lead to an eventual breakdown in the Act because it leaves too much of the problem to be dealt with by measures yet to be devised. Since the Act has specific deadlines for attainment of its objectives, EPA may work itself into a position where the law will require it to institute strong and unpopular measures as the deadlines approach. The public reaction against such measures may lead to weakening amendments to the Act. The structuring of such a confrontation may indeed be a part of the strategy of some who resist implementation of the Act. It may be that EPA would have been better advised to whittle off a slightly bigger piece of the problem at earlier stages so as to avoid the need for sudden imposition of very strong measures as the deadline approaches.

The essentially political nature of this problem imposes one limit on the effects of environmental litigation. Without litigation, complex source controls might never have been devised. But the successive weakening revisions to the regulations demonstrate that environmentally oriented litigation is unlikely to carry air quality programs very far beyond the point where their public support ends.

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221. See State Plans and Enforcement, supra note 5, for discussion of some of these measures. Some of the steps EPA has taken have been sufficiently unpopular to result in amendment of the Clean Air Act. For example, Congress forbade EPA to impose the parking surcharge program which the agency proposed to adopt. See note 120 supra.


As this Comment goes to press, it should be noted that indirect source review has been suspended by EPA. Review of Indirect Sources, 39 Fed. Reg. 45014 (1974). No review will be made of sources which commence construction before July 1, 1975. Id. § 52.22, 39 Fed. Reg. 45015.

This suspension is in response to a prohibition contained in the Environmental Protection Agency's appropriation for Fiscal Year 1975, H.R. 16901, 93d Cong., 2d Sess. (Committee Print). Section 510 of H.R. 16901 provides that

"[n]o part of any funds appropriated under this Act may be used by the Environmental Protection Agency to administer any program to tax, limit, or otherwise regulate parking facilities."

Though this language clearly indicates that Congress did not understand the complex source review regulations as they then stood, since those regulations sought to govern facilities with associated parking areas, rather than the parking areas themselves, it is nevertheless certain that what Congress intended was the suspension of indirect source controls. 5 Env. Rptr.-Curr. Dev. 1295 (1974).

The wisdom of this suspension may be questioned on three major grounds. The first of these is that it is hasty to overturn the judgment of the framers of the Clean Air Act that land use controls might well be necessary to achieve clean air standards. See discussion supra. Second, the procedural objection: the bill was passed at the end of the session when the only practical alternative to passage was to leave the affected agencies without appropriations. 5 Env. Rptr.-Curr. Dev. 1295 (1974). Finally, overthrowing a program which was designed to limit automobile driving at a time when such limitation is necessary from energy as well as environmental considerations does not seem wise.