



# **Environmental Law Institute**

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## **INTRODUCTION**

The current economic and policy literature on environmental rulemaking identifies a set of definitions and concepts involving economics that are often inconsistent and confusing. While some writers use the term economics in reference to the application of benefit/cost analysis (or its derivatives), others have market-based regulatory approaches or industry impacts in mind. Most commonly, types of analysis are confused with types of standards. The net result is a diffuse sense of what is meant by economics in terms of environmental protection and an inability to generate a broad assay of its potential role under existing environmental statutes. Past studies, by focusing on one or perhaps two different meanings to economics, have resulted in analyses that are too narrowly defined to capture all of the relevant applications of economics under current environmental laws.

The purpose of this paper is to evaluate the potential for using economics in the rulemaking processes set out in environmental legislation. This is accomplished by defining and adopting the phrase “economic-based regulation” to capture the essential characteristics of the many uses of economics in environmental rulemaking. This phrase is then applied, through a review of the statutory language, legislative history, and case law, to the requirements of seven environmental statutes: the Clean Air Act (CAA); the Clean Water Act (CWA); the Safe Drinking Water Act (SDWA); the Resource Conservation and Recovery Act (RCRA); the Toxic Substances Control Act (TSCA); the Federal Insecticide, Fungicide, Rodenticide Act (FIFRA); and the Comprehensive Environmental

Response, Compensation and Liability Act (CERCLA).<sup>\*</sup> The next section summarizes the complete statutory analyses, contained in Appendix A. In addition to specific findings relating to the potential for economic-based standards under any given statute, certain themes or conclusions are also presented that apply in a general fashion across the board.

In reviewing the Summary Section, several caveats should be kept in mind. First, the statutory summaries are not a perfect substitute for the formal analyses presented in the Appendix and they should be read together (the summaries are cross referenced to the more complete analyses). Second, the analysis was conducted in isolation of actual agency practices. Agency interpretation of statutes or agency activities are considered only when they were an issue in the case law or legislative history. Finally, there are only a few instances where conclusions can be reached unambiguously and the analysis, perforce, often hinges on interpretations or assumptions. Every attempt is made to illuminate these uncertainties throughout the discussion and to make them explicit.

Even with these limitations, the report identifies a wide range of junctures in the decision-making process where economic-based regulation can play an important role. While the statutorily permitted analysis may not be that which is formally called for in

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<sup>\*</sup> The research methodology used in this study involves a formal review of the statutory language, legislative history, and case law for each of the seven statutes. In general, these three components constitute the major basis for judicial interpretation and construction of an act's requirements and directives and therefore a court's review of agency actions under an act. However, each is not accorded equal weight. Very simply and generally stated, courts look first to the statutory language, second to the legislative history when the legislative intent is ambiguous or obscure and third to past court interpretation of the relevant statutory language or legislative history. There is another level of analysis involving administrative interpretation that is not, with one major exception, followed in this study. Because the purpose of this research was to analyze independently the seven statutes in isolation of actual agency practices, no attempt was made to investigate agency implementation or interpretation of relevant statutory directives. Nevertheless, courts may rely on agency interpretations particularly if they are made soon after the particular phrase became law and if it has been in use for a long period of time. The one instance where agency interpretation of a statute is covered in some detail is under the section on RCRA, where the lack of clarity in the statute and absence of relevant legislative history suggests that greater weight may be given to the agency's interpretation of the use of economics under that act.

economic theory, it may still lead to greater regulatory sensitivity to variations in marginal costs and benefits. In the past, proposed uses of economics have focused mainly, although not exclusively, on the setting of environmental goals and have, in large part, ignored other components of the regulatory process. This research provides a basis for expanding that view to identify other aspects of rulemaking where economics can come into play.

### ECONOMIC-BASED REGULATION

Despite a lack of consistency concerning the definition of economics in environmental rulemaking, there is a common theme throughout the potential uses and proposed applications of economics: that the allocation of societal resources can be improved by greater consideration and sensitivity to variations in the marginal costs and benefits of environmental control. In other words, a regulatory process that explicitly acknowledges differing environmental costs and benefits between, for example, pollutants and pollutant sources, will in itself provide greater social benefits (i.e., provide increased returns from public investment) than regulatory processes that do not. For example, it is this theme that underlies market-based regulatory initiatives allowing firms to determine least-cost solutions and explicitly taking into account variations among firms in the marginal cost of pollution control; as well as the broader concept of benefit/cost analysis, equating at the margin the benefits and costs of environmental protection measures. This paper uses this theme--greater social benefits by considering marginal costs and benefits in regulatory programs--as its definition of economic-based regulation.

The wide latitude offered by the definition for economic-based regulation is intentional and was selected so as not to limit the analysis from the start. Importantly, it permits consideration of a rather broad range of regulatory characteristics and provisions that are often not formally considered. For example, this definition would

include requirements that decision makers use economics in setting standards through mechanisms like benefit/cost analysis, cost-effectiveness analysis, and risk/benefit analysis, as well requirements intended to shift the focus of decision making to those with the incentive and information to find a more economically rational result (e.g., performance versus equipment specification standards). Economic-based regulation as defined here recognizes that the solution (more equality of marginal costs and benefits) is most important, not the analytical approach used to achieve that outcome. It does, on the other hand, suggest a hierarchy of economic methods from most explicit to least explicit. For example, it is assumed that the selection of an emissions tax as a control method would depend on an at least some consideration of the marginal costs and benefits of other alternatives. It should also be noted that this definition does not focus on any one point of the regulatory process, such as standard setting, but rather on any element of the process that effects the final outcome.

## **STATUTORY ANALYSES -- SUMMARY**

### INTRODUCTION

This section summarizes the formal analysis contained in Appendix A of the role of economic-based regulation in the major provisions of seven environmental statutes. These statutes constitute the major part of EPA's regulatory authority in terms of Agency resources and environmental effects. The National Environmental Policy Act (NEPA) was excluded from the formal analysis phase because it is not, strictly speaking, administered by EPA and because it is not a standard-setting statute. On the other hand, NEPA may have a bearing on the existing statutory authority for the Administrator to consider economics in regulatory programs and is discussed in the conclusions section of the report.

The seven statutes studied here incorporate a tremendous range of regulatory requirements and affect every economic activity in the country. This diversity of mandates and authorities makes it difficult to generalize across statutes concerning the potential role of economic-based regulation. Nevertheless, there are certain common elements of the statutes that bear on the potential for economic-based regulation. These are worth examining briefly before proceeding with the more detailed summaries.

- All of the statutes can be divided, to a greater or lesser degree, into three phases or broad authorities: goal setting (for example, National Ambient Air Quality Standards under CAA, Maximum Contaminant Levels under the SDWA, and Water Quality Standards under CWA); standard setting/ permitting--the translation of the goals into enforceable standards, including variances, exemptions, and timing of compliance (for example, state implementation plans under CAA, National Pollutant Discharge Permits under CWA, and the RCRA permitting process); and enforcement of the standards and permits. In general, the specificity of the statutory language and its documentation regarding the role of economic-based regulation decreases as one moves from goal setting to enforcement. As a general rule, at each stage the Administrator is granted greater discretion in terms of the type of factors that can be considered in his decisionmaking.

- Although the EPA Administrator's ability to consider economic issues in setting goals or standards is often limited, many of the statutes delegate actual implementation of the federal requirements to the states and provide the states with greater flexibility. This is most true under the CAA, SDWA, and RCRA. This suggests that states may be an important focal point for consideration of economic-based regulations. On the other hand, state programs are generally constrained to be at least as stringent or functionally equivalent to federal guidelines and the actual flexibility can only be determined on a case-by-case basis. Further, several acts, most notably TSCA and FIFRA, partially

preempt state programs and offer less opportunity for a significant state role in considering economic-based regulation.

- The most common way for economics to enter the statutory decisionmaking is through economic impact analyses or assessments. This partly reflects Congressional concerns over macro-economic effects such as plant shut-downs. The weight to be accorded such analyses is not often made explicit in the statute, but is most generally used for non-marginal comparisons of environmental benefits resulting from rulemaking and employment, price and other macro-economic effects. It is important to distinguish these analyses from the types of cost studies implied by the definition of <sup>o</sup>economic-based regulation and to be aware of analyses being conducted strictly for informational purposes and not having a substantive part in the rule-making process.

- Cost considerations (marginal and non-marginal) enter into almost all of the statutory requirements (although in varying ways) and appear to suggest that Congress was aware of variations in marginal costs. However, possible variations in marginal benefits are not so explicitly recognized. In general, the acts tend to require nationally uniform standards and goals that presuppose uniform environmental benefits (one justification for this approach is that it avoids the problem of certain states or regions allowing greater pollution and thus attracting industry). While there are several points in most regulatory decision processes where uniformity is, in fact, relaxed, the net effect still prevails; variations in marginal benefits are assumed away. There are some important exceptions, particularly the parts of the SDWA, TSCA and FIFRA, which are highlighted in the analyses.

- Where a statute is unclear concerning the role of economics or the Administrator's discretion in considering economic-based regulation, the tendency of the courts is to require less, rather than more, formality. There are several reasons for this. On one hand, the courts tend to defer to the Administrator's judgment in such cases as long as he acts in a reasonable manner, that is he is within a "zone of

reasonableness.” Thus, to the extent that the Administrator does not choose to conduct more formal analyses of environmental costs and benefits, the courts appear unlikely to require him to do so. In addition, the courts sometimes appear to take the view that if Congress had wanted the Administrator to conduct, for example, formal benefit/cost analysis of EPA regulations, it would make that requirement explicit. In the absence of statutory language to that effect, courts tend to assume that such analyses need not be part of the rulemaking docket. Finally, this line of reasoning is reinforced by the relatively few instances where EPA actually conducted benefit/cost analysis as a part of its rulemaking, at least until recently. As a result, the case law has developed, in large part, around industry plaintiffs calling for more complete balancing of costs and benefits, rather than public interest claims of too much economics. The courts in such cases tend to acknowledge the Agency’s discretion, assuming no statutory requirements to the contrary, and hold that greater economic emphasis is not necessary.

- Related to the above conclusion, is the larger issue of whether court decisions holding that EPA does not have to conduct certain types of analyses means that the Agency cannot undertake such analyses. This question seems to have no definitive answer and may suggest greater flexibility on the part of the Administrator than has been typically exercised. That is, to the extent that courts grant deference to Agency judgment, within the statutory authorities and requirements of the Administrative Procedure Act, EPA may have the ability to consider economics more formally than it has in the past. It should also be noted that there may well be constraints on this ability based on the argument (mentioned above) that if Congress had intended for rulemaking to involve economics more explicitly, it would have said so. The statutory summaries below highlight sections of the statutes where this particular argument is relevant.

- Typically, the enforcement authorities granted EPA under the statutes provide for certain civil and criminal sanctions and, in some cases, non-compliance penalties. These provisions tend to give the Administrator wide prosecutorial discretion concerning

when and how they are applied (there are some important exceptions that are noted in the text). To the extent that enforcement affects the level of industry compliance with a standard, and therefore the associated costs and benefits, the enforcement decision process may be one point where economic considerations can play a useful role.

- o Most of the statutes contain imminent hazard provisions or similarly constructed directives. Essentially, these provide the Administrator authority to take a range of quick and often short-term actions to address hazards that constitute a substantial health or environmental danger. As a general rule, these sections allow the Administrator greater flexibility and discretion than other statutory sections in terms of when the provision is invoked and the type of action brought. The discretion hinges, most often, on the definition of substantial and imminent, terms that are typically only vaguely defined in the statute. The imminent hazard sections appear to be included as safety valves that allow Agency action outside of the strictures of the more formal rulemaking process. However, they are also, in general, to be intended as interim measures subject to change and revision under other statutory sections. In this sense it might be argued that economic considerations under imminent hazard provisions are to be accorded less weight than health or environmental concerns since the former can be factored in at a later stage. On the other hand, since these provisions are generally an outgrowth of common law remedies (where judicial benefit/cost-type balancing plays a critical role), an opposite argument can also be constructed. The limited case law appears to reflect a mix of these two considerations.

- o The statutory weight specifically accorded to the design and implementation of regulatory standards and procedures is generally not duplicated when it comes to defining what triggers a specific substance or hazard to fall within the relevant regulatory process. This suggests that even when an Administrator is statutorily constrained in considering economic concerns once a regulatory mechanism is started, he may have greater discretion in balancing economic factors in advance of triggering #at process.

Each statute reviewed here uses a different set of criteria or definitions in terms of what substances or hazards should be regulated, for example, RCRA contains specific lists (as well as general criteria), TSCA is ruled by definitions, and SDWA is triggered by independent analyses. While the wide range makes generalization difficult, this stage of the regulatory process appears less well defined in most of the statutes than other phases and, as a result, more open to administrative discretion whether that be in terms of economic balancing or consideration of other factors. The significant case law under each statute on what substances should be regulated attests, in part, to this discretion.

- Most of the statutes contain various exemption and variance procedures. Although the authorities granted under these provisions vary tremendously from statute to statute, in general they allow the Administrator to consider the applicability of a regulation to an individual party or class of parties. Often applicability is defined in terms of financial or technical ability to comply and as such, provides some administrative opportunity or discretion to consider economic-based regulation. It should be noted, however, that the variance and exemption procedures are applied within the broader context of the act and as such the granted flexibility is limited by the overall role of economics under the statute. For example, variances from compliance schedules are often provided for under set criteria, the affected parties must ultimately comply with the promulgated standards. These provisions do, in a general sense, allow the Administrator to change the time profile of regulatory costs and benefits.

- Although it is common to classify environmental statutes generically in terms of their sensitivity to economics, the acts complexity makes such a simple categorization somewhat misleading. For example, the CAA has been classified as "cost oblivious," yet such a term applies only to certain sections of the Act, most notably setting of Primary National Ambient Air Quality Standards, and even there is flexibility granted to states in implementing the standards. Table 1 graphically illustrates this point by categorizing the major sections of the seven statutes considered here in terms

of how and where economic-based regulation considerations can enter into the decision process.

### CLEAN AIR ACT

The Clean Air Act is a complicated statute, with the characteristics of economic-based regulations explicitly required or rejected in some sections and implicitly embraced in others. As a general matter, the Act focuses more attention on variations in marginal costs than marginal benefits. The requirements of some of the major sections are briefly outlined below.

- o National Ambient Air Quality Standards (pp. 3-15) - The Administrator may not balance costs against benefits in setting primary ambient air quality health standards. However, states may consider costs and benefits over industry categories in implementing the standards by statutory deadlines in their state implementation plans to reasonably available control technologies (RACT). In addition, states may allow sources under certain circumstances to find the most cost-effective way of achieving RACT on a plant-wide or multi-plant basis. It appears that the same constraints are imposed in setting secondary welfare standards. The Administrator is, however, granted a greater degree of flexibility under the secondary standards in that there are no statutory deadlines for attainment.

- o New Source Performance Standards (NSPS) (pp. 16-28) - In setting NSPS, the Administrator is to consider the cost of achieving emission reductions or cost-effectiveness in setting the performance standard. Further, the Act prohibits EPA from requiring a particular technology to achieve the standard. The statute also allows the Administrator to "distinguish among classes, types, and sizes within categories of sources" in establishing the standards. Waivers are permitted to test innovative technologies.

- o Hazardous Air Pollutant Regulations (NESHAPs) (pp. 28-31) - NESHAPs are performance standards that must be set so as to provide an ample margin of safety and the cost of achieving the standards is not to be considered in the standard-setting process. In addition, NESHAPs cannot be differential standards for the same pollutant. Congress has provided the Administrator some flexibility and permits interim alternative controls, work practices, and other methods for protecting the public health from regulated toxic pollutants in the event of technical infeasibility or "economic limitations."

- o Prevention of Significant Deterioration (PSD) (pp. 31-47) - As with the implementation of RACT, state administrators may require pollution controls that vary across individual sources in determining BACT (in theory, more stringent than NSPS), under the PSD program and LAER in nonattainment areas for major new sources and modifications. It is less clear how states are to balance the costs of requiring the controls against their benefit, and there is evidence in the legislative history that air quality considerations have much more weight than economic ones. All of these performance standards under the Act--RACT, BACT, and LAER--are required to be technology-based standards.

- o Mobile Source Standards (pp. 47-59) - The mobile source provisions of the Act require the Administrator to give appropriate consideration to the cost of applying technologies within the time period available to manufacturers. He may also consider economic feasibility in applying the standards to small manufacturers and in granting certain exemptions until 1983. There is administrative discretion in choosing among technological control options, but consideration of alternative economic-based regulations for emission control does not seem to be contemplated. Emission control standards necessary to protect the public health are separate from other measures which

states can implement to reduce ambient pollution and attain standards (e.g., transportation control plans, tolls, parking restrictions). The Administrator must consider economic feasibility in regulating fuel and fuel additives.

- o Enforcement Provisions (pp. 59-73) - The discretion given to the Administrator to weigh economic feasibility, institutional resources, and good faith on the part of violators in prioritizing the Agency's enforcement effort appears to go unchallenged. However, Congress seems to have intended civil compliance and penalties to be assessed with less discretion than EPA has exercised. The compliance penalty policy, mandated by the Act, requires EPA to assess penalties for noncompliance equivalent to the value of the company of its noncompliance minus expenditures toward achievement of emissions limits.

#### RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

RCRA establishes a comprehensive regulatory and enforcement framework for the control of hazardous and other solid wastes, and for the promotion of resource conservation and recovery (this analysis focuses primarily on the former). Hazardous wastes are subject to special requirements under subtitle C of RCRA, which is generally silent on the issue of economic considerations during regulatory development (pp. 1-4). Neither the definition of hazardous wastes, nor the language on standards applicable to generators, transporters, or owners or operators of treatment, storage, or disposal facilities explicitly mentions or rejects economic concerns in making regulatory decisions. The major provisions of RCRA are discussed below.

It appears that the Administrator has significant flexibility under the Act to consider costs and benefits of alternative control options (cost-effectiveness analysis) and economic-based standards within the general mandate of "as may be necessary to protect human health and the environment."

- o Identification and Listing of Hazardous Wastes (pp. 4-6) - The statute suggests an essentially health-based definition for a hazardous waste. It identifies several factors for EPA to consider in identifying and listing hazardous wastes, but offers little additional guidance on how the final choices are to be made. The Act does not appear to necessarily preclude nor endorse a balancing of risks against costs.

- o Standards Applicable to Generators of Hazardous Wastes (pp. 7-8) - EPA is given rather broad discretion (at least little Congressional guidance) in designing a manifest or other reasonable systems for tracking hazardous waste. The legislative history does note a concern about overly burdensome requirements. As in other sections of the Act, cost-effectiveness comparisons appear to be permissible.

- o Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (pp. 9-11) - EPA is to set “performance” standards as necessary to protect human health and the environment. It does not appear that Congress intended the conventional definition of “performance standard” but rather a series of specification standards governing owner/operator performance. These are to include standards, for example, for treatment, storage, and disposal techniques and procedures, and for location, design, and construction of facilities, among others. While EPA is allowed to distinguish between new and existing facilities, the legislative history of the Act suggests little opportunity for considering more formal benefit/cost tradeoffs or alternative regulatory approaches under this section.

- o Authorized State Hazardous Waste Programs (pp. 12-13) - RCRA intended that states ultimately administer the regulatory process and EPA is to authorize the state programs if they are: equivalent to the federal program, consistent with the federal program and other state programs, and provide adequate enforcement. The terms used in this section appear sufficiently flexible to allow limited administrative discretion in considering economics and in the use of alternative regulatory approaches that achieve the goals of the Act.

## TOXIC SUBSTANCES CONTROL ACT (TSCA)

TSCA is driven by the requirement to protect public health and the environment from "unreasonable" risks of harm posed by chemicals. The Act's goal is to be achieved through testing requirements on all chemical mixtures and substances (with some important exceptions) and necessary use restrictions. Balancing economic, health and environmental concerns plays an important role throughout the Act, especially in determining whether a risk is "unreasonable." The legislative history of TSCA suggests that Congress intended the Administrator to have broad authority to carry out the Act and should consider the environmental, economic and social impacts of his actions. In the testing and key regulatory provisions of the Act, the Administrator is required to evaluate benefits and risks involved in regulating unreasonable risks (pp. 2-6). EPA is not required to assign dollar values to the risks associated with a substance, to the "social" costs of the action, or to the effect of the action on the availability of benefits, particularly in the case of comparing noncommensurates. Although costs are to be incurred only if offset by benefits of the same magnitude, the legislative history also indicates that the intent was not to require the Administrator to necessarily provide cost-benefit justifications for his action. Nevertheless, it appears that the Administrator has wide-ranging discretion in his decisionmaking procedures and that this discretion will allow his actions to survive most judicial scrutiny.

- o Testing Requirements (pp. 6-10) - Section 4 empowers the Administrator to adopt rules requiring manufacturers to test their existing chemical products. The Administrator has discretion in determining the standards for the development of test data and does not appear particularly limited in their selection. The Act does suggest several factors to be taken into account. Because Congress did not see this section as actually removing substances from commercial use, the showing of associated risk is generally less demanding than in other sections. Exemptions may be granted if similar test information is already available.

- o Pre-Manufacturing Notices (pp. 10-14) - Section 5 directs the Administrator to prohibit or otherwise restrict manufacture of a new chemical substance if it will present an unreasonable risk. Manufacturers must notify EPA of intent to manufacture a new chemical, or an “old” chemical for a significant new use. EPA generally has broad discretion in reacting to this information and can: take no action (after public notice); issue a section 6 rule; or if there is insufficient data on which to make an evaluation, issue an administrative order prohibiting or limiting use and disposal.

- o Regulation of Hazardous Chemical Substances and Mixtures (pp. 14-20) - Section 6 applies to chemicals both before and after their manufacture and distribution. It authorizes the Administrator to issue rules needed to protect against unreasonable risks, using the least burdensome requirements. The requirements may prohibit or limit commercial use, disposal, or manufacture; and there appear to be few constraints on the Administrator’s selection of alternatives. In addition, the Administrator is directed to consider and publish a statement with respect to the risks and benefits of a substance subject to a rule, the substitutes available, and the reasonably ascertainable economic consequences of the rule.

- o Relationship to Other Environmental Laws - TSCA provides that if a substance can be more adequately controlled by another environmental law, that law should be invoked, unless it is in the public interest to use the authority granted by TSCA. EPA must undertake a brief examination of the benefits and costs of bringing an action under the different statutes. New chemicals, however, come under the jurisdiction of TSCA alone. Federal actions under TSCA do not preempt state standards unless the state standard is identical or more restrictive. Finally, the unreasonable risk language appears in several, more minor, sections of the Act, including reporting of information, exports, and disclosure of data.

## FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA)

FIFRA establishes a registration and use classification structure for pesticides, essentially forbidding any transaction involving an unregistered pesticide. Regulatory decisionmaking under FIFRA is guided by the term "unreasonable adverse effects on the environment." (Defined as "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide.") This entails weighing of benefits--in terms of increased yields and economic return to the chemical industry and U.S. agriculture--against risks of harm to human health, and injury to non-target species and the environment. The relative weight to be assigned by the Administrator to the risk and benefits of a pesticide varies according to the particular action taken. There is, however, an overriding concern expressed throughout the Act to prevent risks to public health.

The major portion of the Act involves the registration process and related procedures. Generally, risk/benefit balancing is to be applied under the Act in: (1) determining whether to approve or deny an application for pesticide registration, including the development of standards concerning the type of necessary information; (2) determining whether a pesticide should be classified for a general (no unreasonable adverse effects) or restricted use; (3) determining whether to issue a notice of intent to cancel a registration or to hold hearings; (4) determining whether to suspend a registration pending completion of cancellation proceedings; (5) determining whether to issue a final cancellation order; (6) determining whether a registrant must submit additional factual information; and (7) determining when information submitted during the registration process is to be disclosed.

Both case law and the legislative history show that Congress has become increasingly concerned that the EPA Administrator adequately consider the benefits of a pesticide use before taking an action under FIFRA. Courts have held that the Administrator's discretion has not been exercised properly unless there has been an

adequate consideration of benefits, especially when suspending or cancelling a registration. Amendments to the original 1942 law have included checks and balances on the Administrator's discretion to regulate pesticides. Any proposed or final regulation must be submitted to the Senate, House and Department of Agriculture for approval. Any cancellation notice must first be sent to the Secretary of Agriculture for comment. In addition, the Administrator must prepare an economic impact statement on the probable effects of his proposed actions on the products and prices of relevant agricultural commodities. These changes have not altered the original, overriding purpose of the law, to prevent unreasonable effects on the environment," but rather have added assurances that the Administrator consider the consequences of his actions in minimizing risks.

Short of providing guidance on the administrative and procedural aspects of the registration process, there is little in the Act, legislative history or case law that restricts the Agency in its balancing of risks and benefits or in the actual design and implementation of the process; pesticide use restrictions are to relate to the degree of health and environmental hazard. It is clear that Congress intended EPA to develop a flexible process that would allow complete consideration of alternative regulatory costs and benefits.

State authorities under FIFRA are limited and essentially follow EPA standards and procedures. The Act does allow for additional uses of a pesticide to meet special local needs, but only if not subject to restrictions by EPA (pp. 27-29).

#### COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT (CERCLA, or Superfund)

Unlike most statutes that emphasize standard-setting to control pollution, CERCLA employs liability for cleanup and resource damages as the primary incentive for pollution control. In addition, it provides a response and funding mechanism for addressing releases of hazardous substances. Those parties responsible for releases and

threatened releases of hazardous substances may be held liable for the resulting response costs incurred, which may include the costs of short-term removal actions, longer-term remedial actions, and natural resource damages. Response authority, liability, and cost recovery are all linked to the National Contingency Plan (NCP).

Congress was particularly and primarily concerned under CERCLA that expensive, long-term remedial actions (especially those financed by the fund) be carried out in a cost-effective manner. There appears to be no legislative barrier to more formal application of benefit/cost analysis and balancing tests to determine appropriate responses under the Act or to establish clean-up priorities. Fund financing mechanisms (a combination of federal funds and taxes, by set schedule, on chemical feedstocks) are set by statute, thus precluding administrative modification of such mechanisms (pp. 22-23). This is particularly the case in determining what sites to clean-up and how extensive a clean-up to undertake.

Explicit requirements for EPA to weigh costs and environmental protection in its actions are contained within three principal provisions of CERCLA.

- o National Contingency Plan (pp. 2-7) - EPA must design a National Contingency Plan that includes: methods for evaluating the costs of remedial actions, criteria for determining the appropriate extent of response actions, means to ensure that remedial actions are cost-effective, and criteria for determining priorities among releases, considering a variety of environmental and other factors. This section also requires EPA to develop a national priority list of hazardous waste sites to which it will direct its response actions. The stated criteria for selecting the sites are generally risk-based and non-economic. In addition, the Act requires that there be at least 400 sites on the list and at least 1, if possible, from every state.

- Response Authority (pp. 7-14) - EPA must ensure that fund-financed remedial actions are carried out in accordance with the NCP and that such remedial actions are cost-effective, considering the need for environmental protection and the availability of fund monies to address other releases of hazardous substances.

- Reportable Quantities (pp. 14-16) - In addition to specifically listing hazardous substances, CERCLA allows EPA to identify additional hazardous substances. EPA is also required to set reportable quantities of all designated or listed hazardous substances. The Administrator appears to have broad authority in balancing the costs and benefits in the required determinations; the legislative history only suggests that they be sensitive to private and administrative costs.

Of the remaining sections of the Act, two are important to EPA. The first concerns post-closure liability insurance; the second involves more general financial responsibility requirements for owners and operators of hazardous waste disposal facilities (actually two separate sections) (pp. 17-18). Other than directing EPA to investigate the feasibility of using private insurers for the post-closure insurance, the statute provides little guidance. It does state that the levels of financial responsibility should reflect the varying degrees of risk among classes of facilities.

#### SAFE DRINKING WATER ACT (SDWA)

The SDWA is designed to protect human health from contaminants in public water systems. The setting of goals under the Act is essentially a health-based process, but the translation of these goals into enforceable standards permits significant balancing of the costs and benefits of control. Congress intended that the requirements of the Act be flexible enough to respond to new information and control techniques and to be sensitive to variations among health risks relating to different public water systems and the associated control costs. The major focus of SDWA is on the development of primary and

secondary drinking water regulations, although several other sections are important as well.

- o Primary Drinking Water Standards (pp. 2-8) - The Act sets out a multi-stage process which results in recommended Maximum Contaminant Levels (MCLs) based on potential health effects alone. Revised primary standards are to be performance standards, set as close as possible to the recommended MCLs and based on best treatment technique or other means generally available. The Administrator is to require specific techniques only when there is insufficient evidence to construct the performance standards. In general, the Administrator is granted discretion in balancing costs and benefits in selecting contaminants and MCLs and in determining how and where to apply the standards. However, the Act seems to imply that this discretion primarily involves compliance timetables, to be implemented through the variance and exemption procedures discussed below. The secondary drinking water standards are to be based on aesthetic concerns. These are not enforceable regulations.

- o State Enforcement Authority (pp. 8-12) - The Act intends states to carry out the bulk of the program, particularly in terms of **enforcement** authority. Under set conditions (e.g., no less stringent regulation, etc.), EPA is to authorize states for primacy. Congress granted states significant flexibility in implementing their programs (subject to the more general conditions) and expects the states to use any effective means of ensuring public protection. EPA can step in and enforce federal requirements where states fail to do so, but is reasonably constrained so as not to impinge on state flexibility and prerogatives.

- o Variations/Exemptions (pp. 12-16) - These are the primary mechanisms envisioned by the Act to accommodate variations in marginal costs and benefits. The variance provision suggests the need to engage in benefit/cost balancing prior to issuance of a rule. Exemptions can apply only to existing facilities and are designed to be sensitive to economic factors that prevent compliance as well as other socio-economic

characteristics of a public water system. Variances are potentially open-ended in terms of their duration, while exemptions are not.

- o Underground Injection Program (pp. 17-21) - EPA is to establish minimum requirements for effective programs to prevent underground injection of chemicals which would result in noncompliance with primary drinking water standards or, more generally, adversely affect health. These programs can involve a rather wide range of alternative requirements and must consider technological differences and burdensome compliance costs. Authorized states are to carry out the program by rule or permit. As in other sections of this Act, there appear to be few constraints on extent of control and methods for achieving it. Further, there appear to be no prohibition of explicit balancing of costs and benefits within the general endangerment definition.

#### FEDERAL WATER POLLUTION CONTROL ACT (FWPCA) or CLEAN WATER ACT (CWA)

The goals of the CWA are to achieve "fishable and swimmable" water quality by 1983 and eventually to eliminate discharges of pollutants into the nation's waters. The major driving force behind achievement of these goals is a multi-tiered system of pollution discharge regulations implemented through national, technology-based effluent limitations and a nationwide permitting program (other important components of the CWA are discussed in the detailed analysis). In general, the Act requires that the discharge regulations or guidelines be technology-based standards, and provides few opportunities for the consideration of alternative control techniques. Economic considerations are factored into the Act at various stages, but generally on the side of costs, not benefits, and then usually in a non-marginal sense. The specific requirements for the major sections are briefly highlighted below.

- o Effluent Limitations Guidelines (pp. 3-18) - EPA is to set a series of effluent limitation guidelines based on technology considerations for industry categories and subcategories. These guidelines must be included in permits written for individual

sources and bear no relationship to water quality goals unless the technology-based standards are not adequate to achieve water quality standards, then more stringent limits may be necessary. The Act contains a set timetable for compliance with these standards. The first phase of the process, best practicable technology (BPT), is the least stringent and provides for a limited benefit/cost (actually cost-effectiveness) test of the standards--e.g., comparison of costs to effluent reduction achieved. BPT does not allow plant-by-plant tradeoffs but does permit industry-to-industry comparisons as well as among classes or categories within an industry. The industry effluent limitation classes are to be based on factors that would effect applicable technology and costs. -Variances under BPT can be allowed only when a firm can show that it is characterized by fundamentally different factors from those used by EPA.

The second stage, best available technology (BAT--affecting toxic and other nonconventional pollutants) and best conventional technology (BCT--affecting conventional pollutants), are more stringent but provide somewhat greater flexibility to the Administrator in terms of considering economics, particularly in making source-specific decisions through a variance process. However, there is no requirement for cost-effectiveness analysis in setting BAT, but costs and other undefined factors can be taken into account. These standards are to be technologically and economically achievable by the class or category.

BCT standards appear to require an overall cost-effectiveness test (similar to BPT) and a cost comparison to treatment in publicly owned treatment works to establish the reasonableness of the standards. However, the test methodology and use is unclear in the statute; there is some indication in the legislative history that these standards were not to go beyond the point where marginal costs exceed marginal benefits. Unlike BAT, source-specific variances are not allowed and unlike BPT and BAT, the technology basis for the standard can include production process changes as well as end-of-pipe controls.

- o Standards of Performance for New Sources (NSP) (pp. 18-19) - NSP are performance standards set on the basis of best available demonstrated control technology and other control options. These were intended to be more strict than BAT but at the same time cannot require the application of specific control technologies. The scope of economic analysis under this section is unclear. While the courts have generally held that a benefit/cost test is not required and that only costs need be considered, such analysis may be allowed.

- o Water-Quality Based Effluent Guidelines (pp. 19-23) - The CWA contains two provisions providing for effluent limitations based on water quality considerations that are more stringent than BPT, BAT, BCT, and NSP. The first (**§301(c)** and **§303**) are implemented through the permit process and relate to modifications of BPT required to meet state water quality standards. These are to be set with a margin of safety concerning the uncertain relationship between water quality and effluent limitations. Balancing of cost and benefits in this source-specific process does not seem to have been contemplated, only that water quality standards are met. The second provision (**§302**) relates to BAT and BCT and are set by EPA or a state if the existing limitations will not lead to the statutory goal of fishable and swimmable. In setting these standards, the Administrator is to balance, although necessarily in a monetary sense, the costs and benefits of additional control. Waivers to **§302** standards can only be granted when a source shows that there is no reasonable relationship between economic costs and social costs and benefits.

- o Water Quality Standards (pp. 23-25) - States are authorized to establish inter- and intra-state water use and water quality standards that protect human health and meet the goals of the Act. These standards are used to determine the need for more stringent controls as discussed above and to guide states in the permit-writing process. The Act does not provide clear guidance on how economic issues should enter into the process, but states are clearly permitted to consider economics. For example, to the

extent that the designated uses of a stream segment include waste-load handling, the state can engage in trade-offs between the costs of controlling such an industrial use and environmental benefits obtained.

- Enforcement (pp. 26-33) - CWA contains three primary enforcement tools: administrative orders, civil suits, and criminal actions. In general, the Act limits the ability of the Administrator to use these tools to achieve a better balance of regulatory costs and benefits. Administrative orders or civil actions (federal or state) must be brought if a violation is found. Further, administrative orders must establish a compliance timetable constrained by the schedule set in the statute. Criminal sanctions can be imposed in the face of willful or negligent violations. Courts have recognized that the Administrator must be granted some prosecutorial discretion, but have also noted the legislative history which suggests that an action must be brought once a violation has been identified. The design of specific remedies under a civil or criminal action may constitute the area of widest administrative discretion and may offer a limited opportunity to blunt the effect of inflexible industry-wide regulations on a particular source. The Act also contains ill-defined provisions for using civil penalties, but unlike the similar provisions in the CAA, the CWA legislative history appears to limit their use as an economic incentive for compliance.

- NPDES Permits (pg. 33) - The CWA permit program is the implementing tool for the effluent guideline requirements discussed above. The process itself allows little flexibility for the consideration of economic-based regulation. Established effluent limits must be included, as must the statutorily set compliance schedules.

**Table I. KEY TERMS RELATING TO ECONOMIC BALANCING BY STATUTE**

<u>STATUTE (Program)</u>	<u>STATUTORY PHRASE (page # in text)</u>	<u>INTERPRETATION</u>
<b>CLEAN AIR ACT</b>		
<u>NAAQS</u>	"An adequate margin of safety" (p. 3)	Excludes virtually any economic balancing.
<u>SIP Review</u>	"Extensions" of SIP compliance under "economic hardship cases" where EPA determines it "necessary." (p.9)	Allows for consideration of economic impacts only in requiring states to meet deadlines for compliance or submitting plans.
<u>NSPS</u>	(i) NSPS can "distinguish among classes, types and sizes...of new sources" but must reflect the "...best technological system of continuous emission reduction (taking into consideration the cost of achieving such emission reduction, any nonair quality health and environmental impact and energy requirements." (p. 17)	Allows consideration of costs setting performance standards and for distinguishing between source categories.
	(ii) Alternate standards allowed when "the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations." (p.. 19)	Allows EPA flexibility to accommodate classes of sources for which standard technologies incur high marginal costs.
	(iii) Waivers for innovative technologies that "achieve an equivalent reduction at lower cost in terms of energy, economic, or nonair quality environmental impact." (p. 19)	Encourages industry to meet performance standard in most cost-efficient manner.
<u>NESHAP</u>	(i) Standard must "provide an ample margin of safety to protect the public health." (p. 28)	Economic balancing is not a factor in standard setting.
	(ii) Administrator may set alternative operation oriented standards where "the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations." (p. 29)	Economic considerations can play role in design of means to meet standards.

STATUTE  
Program)

STATUTORY PHRASE  
(page # in text)

INTERPRETATION

PSD

(i) SIP must contain "emissions limits and such other measures as may be necessary" to protect significant deterioration of clean air areas. (p. 34)

Authorizes states to weigh various factors including economics in designing and allocating increments to meet the minimum federal requirements.

(ii) BACT emission limitations derived "taking into account energy, environmental, and economic impacts and other costs." (p. 32)

Limitations can reflect consideration of economic factors as long as emissions allowed do not interfere with NAAQS compliance.

(iii) Best available retrofit technology "shall take into consideration the costs of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility... anticipated." (p. 33)

Economic considerations can play a role in selecting relevant technology.

(iv) Redesignation requires "satisfactory description and analysis of health, environmental, economic, social, and energy effects." (p. 33)

Case law and legislative history are unclear.

Non-Attainment  
SIPs

(i) SIP must "provide for the implementation of all reasonably available control measures as expeditiously as possible" and prior to the deadlines, require "reasonable further progress" through the adoption of "reasonably available control technology." (p. 40)

Provides states with flexibility to balance economic and environmental risks up to expiration of relevant deadlines.

(ii) States must derive an "offset ratio" for accommodating new growth and associated emissions. (p. 41)

Creates a mechanism for encouraging least cost emission reductions for new plants with an overall increase in air quality.

(iii) "Lowest achievable emission rate" which is the "most stringent emission limitation which is achieved in practice by such class or category of source, whichever is more stringent." (p. 42)

Allows little flexibility to consider costs in standard setting.

STATUTE  
Program)

STATUTORY PHRASE  
(page # in text)

INTERPRETATION

**FIFRA**

Rulemaking

Regulations shall "take into account the...differences in environmental risk and the appropriate data for evaluating such risk between agricultural and nonagricultural pesticides." (p. 3)

Provides authority to consider economic trade-offs in rule promulgation.

Registration and Classification

(i) Administrator shall only register pesticides that will not cause "unreasonable adverse effects on the environment." (p. 9)

Explicitly authorizes risk/benefit balancing in reviewing registration applications.

(ii) Pesticides that "...may generally cause, without additional regulatory restrictions, unreasonable effects on the environment..." shall be classified "...for restricted use." (p. 12)

Classification scheme to be based on considerations of benefits and the degree of hazard and adverse environmental effects of use.

Cancellation and Suspension

(i) Cancellations occur when the Administrator obtains information that the pesticide poses "unreasonable adverse effects on the environment" after taking "into account the impact of such final action on...the agricultural economy." (p. 17)

Requires Administrator to explicitly consider costs and benefits of pesticides before cancellation.

(ii) Suspensions are to "prevent an imminent hazard to human health." (p. 18)

Allows some risk/benefit analysis but intended to halt potential adverse effects of pesticide pending more complete review.

STATUTE  
(Program)

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(page # in text)

INTERPRETATION

(iv) Attainment deadlines extensions allowed for states implementing all "reasonably available measures." (p. 40)

Allows for the possibility of considering economic feasibility.

Mobile Sources

(i) Regulations must "reflect the greatest degree of reduction achievable through the application of technology. ..giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers." (p. 48)

Requires EPA to consider economic costs in developing the technology standards.

(ii) Modification of fixed percentage reductions allowed only if they result in "increasing costs or decreasing fuel economy to an excessive and unreasonable degree." (p. 49)

Potential economic disruption can factor in decisions to revise standards.

(iii) Waiver policy for manufacturers lacking "the financial resources and technical ability to meet the standard." (p. 50)

Gives latitude for economic considerations while maintaining commitment to public health.

Enforcement

(i) Compliance deadlines set to what Administrator "determines reasonable, taking into account the seriousness of the violation and good faith efforts to comply." (p. 60)

Allow for consideration of economic circumstances in setting deadlines, but not as a basis for exemption.

(ii) Non-compliance penalties "shall. ..equal...no less than the economic value which a delay in compliance" has for the owner "minus the amount of any expenditure" to maintain compliance. (p. 63)

Intended to recoup full economic benefit of non-compliance.

(iii) Administrator may "remit or mitigate any forfeiture" based upon facts in application by violator. (pp. 63-64)

Allows consideration of economic factors in evaluating the appropriateness of a proposed penalty.

STATUTE  
(Program)

STATUTORY PHRASE  
(page # in text)

INTERPRETATION

**CLEAN WATER ACT**

Effluent Limitations

- (i) Best Practical Technology requires consideration of "the total cost of application of technology in relation to the effluent reduction benefits to be achieved." (p. 4)
- (ii) Best Available Technology set at levels "which will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants..." where "such elimination is technologically and economically achievable." (p. 10)
- (iii) Best Conventional Technology "... (S)hall include consideration of the reasonableness of the relationship between the costs of attaining the reduction in effluents and the comparison of the cost and level of reduction of such pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources..." (p. 15)
- (iv) New Source Performance Standards should reflect "the greatest degree of effluent reduction...achievable through the application of the best available demonstrated control technology, process..." through EPA must consider the "cost of achieving such effluent reduction in setting NSPS. (p. 18)

Water-Quality  
Based Effluent  
Limitations

More stringent limitation required where BCT or BAT will allow sufficient pollution to "interfere with" goal of "fishable, swimmable" water quality limitations to be determined based on "the relationship of the economic and social costs" of achieving them. (p. 20)

Allows for balancing of overall costs and benefits of limitations beyond BAT.

<u>STATUTE (Program)</u>	<u>STATUTORY PHRASE (page # in text)</u>	<u>INTERPRETATION</u>
<u>Water Quality Standards</u>	Intended "to protect the public health or welfare, (and) enhance the quality of water" taking into account "the use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other legitimate uses." (p. 23)	Allows for the consideration of economic factors by states or EPA in setting standards.
<u>Ocean Discharges</u>	Permit review guidelines shall consider (among other things): "(t)he effect of disposal of pollutants on esthetic, recreation, and economic values"; "other possible locations and methods of disposal..." etc. (pp. 34-35)	Economic considerations authorized, emphasis is placed on benefits of not discharging as opposed to costs of prohibiting ocean discharge.
<u>Dredge and Fill</u>	Same criteria as for ocean discharge permits and "through the application additionally of the site on navigation and anchorage." (pp. 36-37)	Authorizes both the Corps and EPA to provide for a balancing of costs and benefits in discharge permit application guidelines.

#### **SAFE DRINKING WATER ACT**

<u>Primary Drinking Water Standards</u>	(i) MCLs "set at a level at which, in the Administrator's judgment...no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety." (p. 3)	Allows no discretion for economic considerations.
	(ii) Primary standards matched to MCLs "as close to the recommended maximum contaminant level as is feasible." (p. 3) "Feasible" means feasible "with the use of the best technology... generally available (taking cost into consideration)." (p. 4)	Explicitly calls for consideration of costs of treatment technology.
<u>EPA Authority to Evaluate Sufficiency of State Programs</u>	(i) EPA has authority to sue states for "failing to implement...adequate procedures to bring the system into compliance by the earliest feasible time." (p. 10)	Allows Administrator discretion to consider economic factors in evaluating adequacy of state implementation.
<u>Variances/Exemptions</u>	Only to be issued if they "will not result in an unreasonable risk to health." (p. 13)	Allows for consideration of costs in so far as they outweigh the health benefits of control.

STATUTE rogram)	STATUTORY PHRASE (page # in text)	<u>INTERPRETATION</u>
<u>Underground Injection Control</u>	Not allowed if "endangers drinking water sources." "Endangers" means threatens to contaminate "public water" system or "may otherwise adversely affect the health of persons." (p. 18)	Allows consideration of variations among states and to avail burdensome compliance costs, but public health is main concern.
<u>Designating Sole Source Aquifers</u>	Requires finding that "the area has one aquifer which is the sole or principal drinking water source for the area and which if contaminated, would create a significant hazard to public health." (p. 21)	Seems to allow little flexibility to weigh economic factors where aquifer involved fits the criteria.
<u>Emergency Powers</u>	Authorizes emergency response where a "contaminant . . . may present an imminent and substantial endangerment to the health of persons..." (p. 22)	Allows some balancing of costs and benefits, but protection of public health takes precedence.

**TSCA**

<u>Underlying Policy</u>	"(T)o prevent unreasonable risks of injury to health or the environment," exercised so as "not to...create unnecessary economic barriers to technological innovation" and with consideration of "the environmental, economic, and social impact of any action." (p. 2)	Requires balancing of risks and benefits in developing regulations.
<u>Testing Requirements</u>	(i) Testing rules must be issued where a chemical "may present an unreasonable risk of injury to health or the environment...", or where there is insufficient data to assess the risks. (p. 6)	Allows application of risk assessment techniques; does <u>not</u> require showing that a substance does or will present a risk.
	(ii) Must include "the relative cost of the various test protocols." (p. 7)	Allows wide discretion to weigh costs and benefits in devising testing standards.
<u>Premanu- facturing Notice</u>	(i) Notice required prior to manufacture of "new chemical substance" or "significant new use." (p. 10)	No discretion to consider economic impacts in requiring notice.
	(ii) Actions can be taken to restrict chemicals if "there is a reasonable basis to conclude that...an unreasonable risk" is posed.	Allowed consideration of costs and choice of action.

<u>STATUTE</u> <u>Program)</u>	<u>STATUTORY PHRASE</u> <u>(page # in text)</u>	<u>INTERPRETATION</u>
<u>Regulation of</u> <u>Hazardous</u> <u>Chemicals</u>	(i) Authorizes promulgation of restrictive rules for all chemicals when "necessary to protect adequately against... (an unreasonable) risk (of injury to health or the environment) using the least burdensome requirements." (p. 14)  (ii) The criteria for making an "unreasonable risk" determination include: "the reasonably ascertainable economic consequences of the rule."	Calls for economic balancing in choosing among alternative restrictions.  Requires the Administrator to account for economic impacts in promulgating use restriction rules.
<b>CERCLA</b>		
<u>National</u> <u>Contingency</u> <u>Plan</u>	NCP shall include "analyses of relative cost"; assurances "that remedial action measures are cost effective over the period of potential exposure"; and setting of clean-up priorities "based on relative risk or danger to public health or welfare or the environment." (p. 2)	Intended to assure that both costs and benefits or effectiveness of clean-up measures are considered in the allocation of limited funds.
<u>Response</u> <u>Authority</u>	(i) "Removal actions" include those "as may be necessary to prevent, minimize, or mitigate damage to public health or welfare or the environment." (p. 8)  (ii) Appropriate "remedial actions" are those "which provide for that cost-effective response which provides a balance between the need for protection of public health and welfare and the environment, and the availability of amounts from the Fund..." (p. 8)	Allows EPA some discretion in weighing costs and benefits in requiring short-term, limited responses to chemical threats.  Directs EPA to carry out fund-financed, longer-term, and expensive remedial actions in a cost-effective manner balancing health and against the availability of money in Fund.
<u>Designation</u> <u>of Hazardous</u> <u>Substances</u>	Authorizes designation of additional substances if their release "may present substantial danger to public health or welfare or the environment..." and to establish "reportable quantities." (p. 14)	Unclear whether EPA is authorized to balance costs and benefits.
<u>Liability and</u> <u>Financial</u> <u>Responsibility</u>	Imposition of incremental annual increases in financial responsibility should reflect "the degree and duration of risk" associated with activities of facilities. (p. 17)	Calls for application of risk assessment techniques and consideration of economic impacts on existing insurance markets.

STATUTE  
Program)

STATUTORY PHRASE  
(page # in text)

INTERPRETATION

**RCRA**

Identification  
and Listing of  
Hazardous  
Waste

Hazardous waste is "...a solid waste . . .which...may...(A) cause...serious ...illness; or (B) pose a substantial . . .hazard to human health or the environment...." (p. 5)

Only human health impacts and to a lesser extent environmental impacts in developing hazardous waste identification criteria.

Generator  
Standards

Must include "a manifest system and any other reasonable means necessary" to assure that all such hazardous wastes generated are designated for permitted treatment, storage, or disposal facilities. (p. 7)

Authorizes EPA to promulgate most cost-effective generator tracking systems as long as they meet overall health protection priorities of the Act.

Treatment,  
Storage and  
Disposal  
Facility  
Standards

Must be as comprehensive as "necessary to protect human health and the environment." (p. 9)

Allows only limited balancing of costs and benefits in setting standards especially for new TSD facilities.

Imminent  
Hazard  
Provision

"Administrator--Notwithstanding other provisions . . .upon receipt of evidence that the handling, storage, treatment, transportation or disposal of any... waste may present an imminent and substantial endangerment to health or the environment . . .may bring suit...to immediately restrain" the offending action. (p. 14)

Excludes consideration of costs and benefits if substantial danger to health or the environment is established.

Part D  
Guidelines for  
Solid Waste  
Plans

Guidelines must reflect a variety of environmental factors and "population density, location and transportation within the region, the rates of generation of wastes, and political, economic, financial and institutional barriers to the planning process." (p. 18)

Requires the consideration of a number of factors including economic factors in setting the guidelines. Agency given broad discretion to use economic analyses.



**I. The Clean Air Act of 1977 (42 U.S.C. §7401-7642, As amended by the Steel Industry Compliance Extension Act of 1981)**

**A. Summary of CAA**

**1. Statutory Directive**

The Clean Air Act (CAA) establishes a comprehensive regulatory and enforcement framework for protecting public health and welfare from emissions from stationary and mobile sources of air pollution. The Act originated in legislation enacted in 1955, 69 Stat. 322, which was considerably expanded by the Clean Air Act Amendments of 1970 and 1977. Pub.L. 91-604, 84 Stat. 1676; Pub.L. 95-95, 91 Stat. 685. The statute was subsequently revised by the Steel Industry Compliance Extension Act of 1981, Pub.L. 97-23.

The CAA has four titles. They address: (1) pollution from stationary sources; (2) mobile source pollution; (3) administration and interagency responsibilities; and (4) noise. Part A of Title I provides for establishment of a federal program to control and prevent air pollution from stationary sources. This air quality program has seven major components:

- (1) establishment of national ambient air quality standards;
- (2) preparation and approval of state implementation plans for achieving attainment of the national ambient air-quality standards;
- (3) establishment of performance standards applicable to major new stationary sources and modifications;
- (4) establishment of emissions standards for the control of hazardous emissions and consideration of other potentially hazardous air contaminants;
- (5) enforcement provisions for noncompliance with standards and deadlines set pursuant to the Act;
- (6) record-keeping requirements; and
- (7) statements concerning the abatement and detection of interstate and international pollution.

Part B of Title I pertains to the study and abatement of the reduction of ozone in the earth's stratosphere.

Part C of Title I is intended to protect and enhance the nation's air resources once the ambient air quality standards are achieved and to assure in these "clean" areas that economic growth will occur in a manner consistent with the preservation of existing air resources. Part C principally regulates new sources by requiring new source review. Special provisions in Part C are designed to protect and enhance air quality in national parks, national wilderness areas and seashores and other areas of special national or regional natural, recreational, scenic or historic value.

Part D of Title I sets forth criteria for federal approval of state implementation plans for areas which failed to attain the ambient air quality standards ("nonattainment areas") by deadlines in the Act. Part D mandates special new source review requirements for nonattainment areas. This subchapter also authorizes federal sanctions for the failure of states and locales to meet these deadlines.

Title II, part A of the CAA pertains to establishment of federal motor vehicle emission and fuel standards, certification of motor vehicles and engines, and provisions pertaining to state transportation control programs. Part B addresses the regulation and enforcement of aircraft emission standards.

Title III of the CAA contains general and miscellaneous provisions. It provides for citizen enforcement suits and outlines novel administrative and judicial review procedures. Its provisions range from legal nuts and bolts, like a severability provision; to substantive provisions governing vapor recovery; to a provision barring federal procurement from violators of the Act.

Title IV pertains to the duties of the Office of Noise Abatement to study and implement controls to abate noise from federal activities.

## **B. Regulatory Activities**

### **1. Ambient Air Quality Standards - Section 7409**

#### **a. Statutory Directive**

The Clean Air Act directs the Administrator to publish, and periodically revise, a list of pollutants that result from numerous or diverse mobile and stationary sources which can reasonably be anticipated to endanger public health and welfare. 42 U.S.C. §7408(a)(1). Within a year after listing an air pollutant, the Administrator shall issue air quality criteria for that substance reflecting the latest scientific knowledge relating to the kind and extent of all identifiable effects on public health and welfare from the presence of the pollutant in the ambient air in varying quantities. 42 U.S.C. §7409(a)(2). On the basis of this data, the Administrator is charged with setting a primary and a secondary ambient air quality standard that, in the judgment of the Administrator, respectively protect the health and welfare of the public.

A primary ambient air quality standard must protect the public health, allowing for "an adequate margin of safety." 42 U.S.C. §7409(b)(1). Secondary ambient air quality standards must protect the public "welfare" from known or anticipated adverse impacts associated with the pollutant. 42 U.S.C. §7409(b). Section 302(h) defines "welfare" to include "effects on soils, water, crops, vegetation, man-made materials, animals, wildlife ...property, ...transportation, as well as effects on economic values and personal comfort and well being."

The Clean Air Act appears to prohibit the Administrator from considering costs of attainment in setting the national primary ambient air quality standards (NAAQS). The relevant provisions of the Act contain no phrases to imply that the Administrator should assess the economic feasibility of meeting the primary health-based standards; no economic factors are included in the criteria he must consider in setting a primary standard.

The issue is less clear with respect to the establishment of the secondary “welfare” standards. In setting secondary “welfare standards,” the Administrator is directed to consider the harmful economic impacts of pollution on the economy. The Act is silent, however, on the consideration of costs of compliance in setting secondary standards.

This line of reasoning, that costs of attainment are not to be considered in setting primary and secondary standards, is shared by EPA. As stated in the recent promulgation of the national ambient air quality standards for ozone; the Agency considers economic feasibility of achieving the standards irrelevant. This notice stated:

Considerations of cost of achieving those standards or the existence of technology to bring about needed reductions of emissions are not germane to such a determination, as the words of the Act and its legislative history clearly indicate.  
44 Fed. Reg. 8202-3 (1979).

#### **b. Legislative History**

There is substantial legislative history on the Clean Air Act Amendments of 1970 and 1977 that the Administrator is not to consider costs of attainment in setting the national ambient air quality standards. For example the Senate Committee Report on S4358 noted:

[C]onsiderable concern was expressed regarding the use of the concept of technical feasibility as the basis of ambient air standards. The Committee determined that 1) the health of people is more important than the question of whether the early achievement of ambient air quality standards protective of health is technically feasible; and, 2) the growth of pollution load in many areas, even with application of available technology, would still be deleterious to public health.

\* \* \*

Therefore, the Committee determined that existing sources of pollutants either should meet the standard of the law or be closed down, and in addition that new sources should be controlled to the maximum extent possible to prevent atmospheric emissions. U.S. Senate, Rep. No. 91-1196, at 2-3, 91st Cong., 2d Sess., Sept. 27 at 1 L.H. 402-3 (1970).

A statement by Edmund Muskie during a Senate debate on the 1970 amendments supports this conference finding. In response to a statement by Senator Griffen that “the technology is not available to meet the standards in this bill,” Muskie replied:

The deadline (for attainment of the standards) is based not, I repeat, on economic and technological feasibility, but on considerations of public health. We think, on the basis of the exposure we have had to this problem, that this is a necessary and reasonable standard to impose upon the industry. If the industry cannot meet it, they can come back (to Congress).

I think that, in terms of public health, if we do not say that this is necessary, there is nobody to say it. But on the question of technological and economic feasibility, there are all kinds of people who complain that it cannot be done. We are the only ones who can say to the automobile industry, and make it stick, “The public health requires this.” This is what this bill says, and nothing more. Senate Debate on S4358, Sept. 21, 1979, 91st Cong., 2d. Sess. at 1 L.H. 239 (1970).

### **c. Case Law**

A series of cases since passage of the 1970 and 1977 amendments to the Act have raised the issue whether economic feasibility is a factor which the Administrator may consider in promulgating the ambient air quality standards. See e.g., Union Electric v. EPA, 427 U.S. 246 (1976); Train v. NRDC, 421 U.S. 6091 (1975); Lead Industries Ass'n v. EPA, 647 F.2d 1130 (D.C. Cir.) cert. den'd, 449 U.S. 1042 (1980); Ethyl Corp. v. EPA, 541 F.2d 1, 14 (D.C. Cir. 1976).

In Lead Industries, supra, the Court of Appeals for the District of Columbia faced the issue squarely. The Petitioner, St. Joe's Mineral Corporation, argued that EPA erred in refusing to consider the issues of economic and technological feasibility in setting the air quality standards for lead. St. Joe's based its claim on S110 which directs the Administrator to allow “an adequate margin of safety” in setting primary air quality standards.

The Court held that the industry's argument was “totally without merit.” *Id.* at 1148. It stated:

St. Joe is unable to point to anything in either the language of the Act or its legislative history that offers any support for its claim that Congress, by specifying that the Administrator is to allow an “adequate margin of safety” in setting primary air quality standards, thereby required the Administrator to consider economic or technological feasibility. To the contrary, the statute and its legislative history make clear that economic considerations play no part in the promulgation of ambient air quality standards under Section 109.\* \* \* Nothing in its language suggests that the Administrator is to consider economic or technological feasibility in setting the ambient air quality standards.

The legislative history of the Act also shows the Administrator may not consider economic and technological feasibility in setting air quality standards; the absence of any provision requiring consideration of these factors was no accident; it was the result of a deliberate decision by Congress to subordinate such concerns to the achievement of health goals. (emphasis added)

Id. at 257.

Quoting the Supreme Court in the Union Electric case, supra, the D.C. Circuit pointed out:

The "technology-forcing" requirements of the Act “are expressly designed to force regulated sources to develop pollution control devices that might at the time appear to be economic or technologically infeasible.”

Id. at 1149, citing Union Electric Co. v. EPA, supra, at 257.

The judges concluded, “We are unable to discern here any, congressional intent to require, or even permit, the Administrator to consider economic or technological factors in promulgating air quality standards. Id. at 1150. In a recent case challenging the primary ozone standard for the failure of the Administrator to consider economic and technological feasibility factors, the D.C. Circuit also rejected economic feasibility factors in setting the ozone NAAQS. API V. Costle, 11 ELR 20916 (D.C. Cir., 1981):

In a subsidiary argument in Lead Industries, the Court was also asked to address whether economic considerations could be considered in setting secondary ambient standards. Petitioners argued that Section 302(h) of the Act, defining “welfare” to include “effects on economic values,” required the Administrator to weigh the cost of

different standards to the industry. Quoting itself in an earlier decision, the D.C. Circuit held that such factors were not to be considered. “This definition does not . . . include the costs of compliance with the air quality standards. It only refers to the economic costs of pollution.” Id. at 1148, citing Motor & Equipment Manufacturers Ass’n, Inc. v. EPA, 627 F.2d 1095, at 1118 (D.C. Cir., 1979).

## **2. State Implementation Plans - Section 107**

State implementation plans (SIPs) contain the mix of controls states intend to implement to attain and maintain the NAAQS. (Certain minimum requirements of these plans for areas in attainment with the NAAQS (“PSD areas”) and nonattainment areas are discussed later in this paper.) Although the Administrator is barred from considering costs in setting the NAAQS, state agencies have considerable latitude to weigh economic factors in meeting them in the development of their SIPs.

Four major program elements are of significance in a discussion of economic considerations in the SIP process:

- (i) criteria which the state may consider in developing its SIP;
- (ii) criteria for the Administrator’s approval or rejection of a SIP or SIP revision;
- (iii) criteria which EPA may consider in designing a SIP where the state’s own implementation plan was either not submitted or inadequate; and,
- (iv) deadlines for submission of SIPs and attainment of ambient air quality standards. (Note, nonattainment sanctions are considered under the Nonattainment Program Section, below).

### **a. Statutory Directive**

- (i) Criteria State May Consider in Developing a SIP

Section 107(a) states that each state has primary responsibility for ensuring air quality within its boundaries, to be carried out by the implementation plan for the

state. 42 U.S.C. §7407(a). The state implementation plan (SIP) must provide for “implementation, maintenance and enforcement of the primary and secondary standards in each air quality control region (AQCR) in the state by deadlines in the Act. 42 U.S.C. §7410(a) Section 110(a) provides that the Administrator shall approve a SIP if, among other things, he finds it includes emission limitations, schedules, and compliance timetables and “any other such measures as may be necessary to ensure attainment and maintenance of such primary or secondary standards, including, but not limited to transportation controls, air quality maintenance plans, and preconstruction review of direct sources. . . .” 42 U.S.C. §7410(a)(2)(B) (emphasis added). [Nothing in the statute limits the mix of controls states can employ or what emission limits for categories of existing stationary sources are “necessary” to meet the NAAQS, although some have agreed that the requirement of emission limits precludes use of economic incentives.] U.S. EPA, Economic Disincentives for Pollution Control: Legal, Political, and Administrative Dimensions, 73 (1974).

EPA regulations support the consideration of economics in drafting state SIPs.

They state in pertinent part:

Nothing in [EPA regulations detailing requirements for SIP preparation and adoption by States] shall be construed in any manner ...

- (b) To encourage a State to adopt any particular control strategy without taking into consideration the cost-effectiveness of such control strategy in relation to that of alternative control strategies . . . .
- (d) To encourage a State to prepare, adopt, or submit a plan without taking into consideration the . . . economic impact of the control strategy set forth in such plan . . . . (or)
- (g) To encourage a State to adopt a control strategy uniformly applicable throughout a region unless there is no satisfactory alternative of providing for attainment and maintenance of a national standard throughout such a region. 40 C.F.R. 551.2. (emphasis added).

To assist states in achieving and maintaining the NAAQS, section 108 of the Act requires EPA to provide states with information on the economic impacts of air pollution control strategies. 42 U.S.C. ~~§7408(b)(1)~~. Under this section EPA must also provide states with information on installation and operation costs and energy requirements of different emissions control techniques. *Id.* General information on transportation control programs must also be provided. 42 U.S.C.~~§7408(f)(2)(C)~~.

(ii) EPA Approval of a SIP

Upon promulgation or revision of a NAAQS by EPA, a state must submit to EPA its SIP for attaining or maintaining the standards within nine months. The Administrator must approve the plan within four months if all the enumerated criteria in the section are met. ~~§110(a)(2)~~ However, under certain “economic hardship cases,” a state may be granted an extension for attaining an NAAQS or for submitting a plan implementing a secondary standard if the Administrator determines it is “necessary.” ~~§§110(e)(b); §7410(e)(b)~~. The Act does not include economic considerations in its directives concerning the Administrator’s approval of a SIP under section 110 of the Act. 42 U.S.C 57410.

State governors may also consider economic hardship in suspending the SIP during energy emergencies under subsection (f). 42 U.S.C. ~~§7410(f)~~. A governor may also issue a temporary emergency suspension of a portion of an approved SIP if he determines that it is necessary to prevent the closing for one year or more of any source of pollution and to prevent substantial decreases in unemployment which would result from such closing. 42 U.S.C. ~~§7410(g)~~. Such suspensions may be granted for no longer than four months in which time the SIP’s limits and compliance schedules for that facility must be revised. EPA’s Administrator may issue a disapproval order if he finds that the suspension of the SIP does not meet the section’s requirements. *Id.*

(iii) EPA's Design of a State Implementation Plan

EPA must adopt a SIP for a state that fails to submit a SIP or SIP revision; or if it submits an inadequate one. 42 U.S.C. ~~§7410(c)~~. In such a case, it would appear that the U.S. EPA may consider the same factors as a state in specifying emission limitations and owner control measures to meet the ambient standards.

(iv) SIP Deadlines

The Air Act contains numerous deadlines for achieving the primary national ambient air quality standards. Section 110(a)(2)(A) provides that, except as provided under subparagraph (I) of that section, the SIP must provide for attainment of such primary standards "as expeditiously as practicable", but in no case later than three years from the Administrator's approval of the SIP or SIP revision. 42 U.S.C ~~§7410(a)(2)(A)~~. In contrast, states are only required to attain the secondary standards within a "reasonable" amount of time. Id.

In addition, the states must have submitted approvable SIPS by June 30, 1979 as a precondition for the construction or modification of any major stationary source in a nonattainment area on or after July 1, 1979. ~~§7410(a)(2)(I)~~. These nonattainment SIPS must provide for attainment of each national ambient air quality standard as "expeditiously as practicable," and in the case of attainment of primary standards, no later than December 31, 1982. States may request that the deadline for a nonattainment area be extended for the automobile-related pollutants ozone and carbon monoxide pursuant to section 172(a) of the Act. 42 U.S.C. ~~§7502(a)(1)~~. States must demonstrate to EPA that attainment of these standards is not possible despite the implementation of all "reasonably available" measures. Where this showing is made, the attainment deadline may be deferred at the Administrator's discretion Up until December 1987. Id.

## **b. Legislative History**

### (i) Criteria States May Consider in Developing a SIP

Numerous statements in the legislative history of the 1970 amendments reflect Congressional intent to give states flexibility in designing goal-oriented implementation programs that are tailored to each state's own particular mix of pollution problems and needs for growth. In the Senate Debate on S.4358, one of the cosponsors of the original air pollution bill in the Senate pointed out:

An important underlying philosophy of the bill is that it is the right and duty of each state to develop its own plans to implement the standards set by the Secretary. To be sure, minimum federal standards are a must, as they free the 50 states from the necessity of competing for business by lowering their standards. Yet states especially imperiled by foul air are not enjoined from passing more stringent measures. Senate Debate on S.4358, Sept. 22, 1970 at 1 L.H. 379 (1970) (Statement of Senator Prouty).

This intent is underscored by Senator Muskie's remarks on the conference committee report on the conference bill. He stated:

May I say to the Senator that during the deliberations on the bill that I have been very much interested in preserving "local option" features so that state and local authorities would be able to pursue options among a broad array, seeking a possible way of controlling or preventing air pollution that is most responsive to their needs. In my judgment, the bill will give state and local authorities sufficient latitude in selecting ways to prevent and control air pollution. Senate consideration of conference committee report, December 18, 1970 at 1 L.H. 137 (1970).

### (ii) EPA Approval of SIP

No legislative history is relevant on this issue.

### (iii) EPA's Substitution of SIP

No legislative history is relevant on this issue.

(iv) Deadlines

It is clear that the Senate sponsors of the 1970 amendments included deadlines intended to override considerations of economic and technical infeasibility in attaining the standards. The House version of the Amendments required only that health-related standards be met "within a reasonable time." H.R.17255, 91st Cong. 2d Sess., §108(c)(1)(C)(i)(1970). The Senate bill, on the other hand, required that the primary standards be attained "within three years." S.4358, 91st Cong. 2d Sess., §111(a)(2)(A) (1970).

Senator Muskie stated in regard to the nature of the bill:

The first responsibility of Congress is not the making of technological or economic judgments--or even to be limited by what is or appears to be technologically or economically infeasible. Our responsibility is to establish what the public interest requires to protect the health of persons. This may mean that people and industries will be asked to do what seems to be impossible at the present time. 116 Cong. Rec. 32901-42902, (Sept. 21, 1970). See also, Sen. Rep. No. 1196, 91st Cong. 2d Sess. 2-3 (1970).

In relation to deadlines for achievement of the secondary standards, however, it appears that Congress left open the possibility that states could factor economic considerations into achievement of the standards. In contrast to the case with primary standards, it did not include deadlines for the attainment of secondary standards. The conference committee report on the proposed 1970 amendments stated:

The conference substitute follows the Senate amendment in establishing deadlines for implementing primary ambient air quality standards but leaves the states free to establish a reasonable time period within which secondary ambient air quality standards will be implemented. U.S. House, Rep. No. 91-1783, 91st Cong., 2d Sess. at 1 L.H. 195 (1970).

**c. Case Law**

(i) State Development of SIP

The courts have indirectly considered what elements a state can consider in formulating their SIP. It is clear that states can weigh the costs of requiring certain

controls in lieu of others in achieving the NAAQS. It can allocate the economic burden of attainment among categories of sources as it sees fit (so long as constitutional guarantees are not violated). Thus a state could attempt to set emission limits that would make the marginal cost of control equal for all sources, minimizing the total cost of attainment. In ruling the Act provides no basis for the Administrator to reject a state implementation plan on the grounds that it is economically or technologically infeasible. The Supreme Court observed in the Union Electric case:

Perhaps the most important forum for consideration of claims of economic and technological infeasibility is before the state agency formulating the implementation plan. So long as the national standards are met, the State may select whatever mix of control devices it desires, and industries with particular economic or technological problems may seek special treatment in the plan itself. Union Electric Co. v. EPA, 427 U.S. 424, 266 (1976), See also, RDC v. Train, 421 U.S. 60 (1975).

Similarly, the courts have held a SIP cannot be rejected because a state voluntarily adopted measures stricter than those specified in the Act. Indiana & Michigan Electric Co. v. EPA, 509 F.2d 839 (7th Cir., 1975); State of Texas v. EPA, 499 F.2d 289 5th Cir., 1974). The Ninth Circuit has also held that a state may consider economic and technological feasibility in granting a variance to the SIP's requirements so long as the variance will not interfere with achievement of a NAAQS. NRDC v. EPA, 507 F.2d 905 (9th Cir., 1974).

(ii) EPA Approval of SIPs

The U.S. Supreme Court held in Union Electric v. EPA, 427 U.S. 60 (1975) that claims of economic and technological infeasibility are "wholly foreign" to the Administrator's consideration of a SIP. 427 U.S. 246, 256 (1976). The Court held that Section 110 of the Act:

[S]ets out eight criteria that an implementation plan must satisfy, and provides that if these criteria are met and if the plan was adopted after reasonable notice and hearing, the Administrator "shall approve" the proposed state plan. The

mandatory "shall" makes it quite clear that the Administrator is not to be concerned with factors other than those specified . . . and none of the eight factors appears to permit consideration of technological or economic infeasibility.

In a recent case, Florida Power and Light Co. v. Costle, 650 F.2d 579 (5th Cir., 1981), a federal Court of Appeals held that in evaluating a proposed SIP, the Administrator is confined to criteria set forth in the Act and may not concern himself with factors other than those specifically enumerated.

A few scattered court decisions have held, however, that the Administrator may consider findings of a state in developing its SIP concerning the economic feasibility of specific emissions controls in situations other than EPA approval of the SIP. For instance in Kennecott Copper Corp., Nevada Mines Dev., McGill, Nevada v. Costle, 572 F.2d 1349 (9th Cir., 1978), the Court held that the determination whether a particular form of emission control is feasible is a matter for the exercise of the Administrator's discretion. *Id.* See also, U.S. Steel Corp. v. EPA, 633 F.2d 671 (3rd Cir., 1980) (involving economic feasibility of regulation for coke oven emissions). In addition, EPA may consider claims of technological infeasibility in granting variances as revisions to the SIP pursuant to Section 110(a)(3), provided that such variances do not jeopardize attainment and maintenance of the NAAQS. Train v. NRDC, 421 U.S. 60 (1975).

(iii) EPA's Development of SIP Where SIP is Not Submitted or Judged Inadequate

The Supreme Court has declined to rule expressly on the issue of economic infeasibility in EPA-promulgated SIPs. In a footnote to the Union Electric decision, the Court seemed to indicate that such considerations would be relevant if the Administrator drafted the SIP himself pursuant to §110(c). However, it stated that this was a question it did not reach in the Union Electric case. 427 U.S. 260, 261 n. 4 (1976).

In a related case, South Terminal Corp v. EPA, 504 F.2d 646 (1st Cir. 1974), the court held however that it would be arbitrary and capricious for the Agency to reject less burdensome, but equally effective, controls in favor of more expensive or onerous ones in designing a §110(c) SIP.

(iv) Deadlines

Case law firmly rejects source claims of economic and technological feasibility in meeting SIP deadlines' except where the Act expressly allows extensions of deadlines for these reasons. In Union Electric, supra, the Supreme Court held:

The Senate's stiff requirement was intended to foreclose the claims of emission sources that it would be economically or technologically infeasible for them to achieve emission limitations sufficient to protect the public health within the specified time. *Id.* at 262.

Responding to the argument that the phrase "as expeditiously as practicable" in section 110(a)(2)(A) of the Act permitted specific sources to challenge a state's imposition of an attainment deadline, the Court in Union Electric pointed out that the Administrator had no authority under the statute to reject an infeasible state plan that reflects a state decision to force technology. *Id.*, at 260-263. The Court ruled that the requirements of the Act demand only that the implementation plan submitted by the state meet the "minimum" conditions of the Amendment. It argued in a footnote, however, that the Administrator might reject a plan if he determined that it was economically possible for a state plan to require more rapid progress than it does, stating:

Economic and technological factors may be relevant in determining whether the minimum conditions are met. Thus, the Administrator may consider whether it is economically or technologically possible for the state plan to require more rapid progress than it does. If he determines that it is, he may reject the plan as not meeting the requirement that primary standards be achieved "as expeditiously as practicable" or as failing to provide for attaining secondary standards within "a reasonable time." *Id.* at 265.

### **3. New Source Performance Standards - Section 111**

#### **a. Statutory Directive**

In contrast to the flexibility the Clean Air Act affords stat& in developing programs to meet the NAAQS for existing sources, its provisions relating to development of new source performance standards (NSPS) leave little room for state discretion. On the other hand, EPA's authority to consider economic factors in establishing NSPS is far broader than it has in the development of NAAQS.

There are at least seven areas of consideration pursuant to Section 111 of the Act, 42 U.S.C. §7411 where economic factors might be considered. These areas are:

- (i) the development of NSPS;
- (ii) listing source categories to which NSPS applies;
- (iii) designation of technological systems to comply with NSPS;
- (iv) promulgation of regulations for Section 111(d) noncriteria air pollutants;
- (v) the revision of NSPS upon application by a governor of a state;
- (vi) promulgation of alternative design, equipment, work practice or operational standards; and
- (vii) approval of waivers for innovative control techniques.

#### **(i) The Development of NSPS**

Section 111(b) authorizes EPA to set "standards of performance" for categories of major new and modified stationary sources that "cause or . . . contribute . . . significantly to air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. §7411(b).

Section 111(a) of the Act defines the term "standard of performance" and authorizes the Agency to factor costs in promulgating the NSPS. It states:

For the purpose of subparagraphs (A)(i) and (ii) and (B), a standard of performance shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. 42 U.S.C. §7411(a) (emphasis added).

NSPS are technology-based emissions standards, and the statute does appear to allow the Administrator to consider variations in benefits across source categories, although not within those categories.

(ii) Listing Source Categories to Which NSPS Apply

Section 111(b) directs EPA's Administrator to list categories of stationary sources to which NSPS applies "if in his judgment it causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare." Id. §74118)(1)(A). The Administrator shall revise such a list as "he deems appropriate." Id. §7411(b)(f)(B). Subsection (b) allows the Administrator to "distinguish among classes, types, and sizes within categories of new sources for the purpose of establishing such standards," Id. §7411(b)(2).

Under subsection (f), the Air Act directs the Administrator to prioritize categories of major sources for the purpose of regulating additional sources. Id. §7411(f). To do this, the Administrator "shall consider--

- (A) the quantity of air pollutant emissions which each such category will emit, or will be designed to emit;
- (B) the extent to which each such pollutant may reasonably be anticipated to endanger public health and welfare; and
- (C) the mobility and competitive nature of each such category of sources and the consequent need for nationally applicable new source standards of performance. Id. §7411(f)(2).

(ii) Designation of Technological Control Systems to Comply With NSPS

Section 111(b)(5) prohibits the Administrator from requiring any source subject to section 111 "to install and operate any particular technological system of continuous emission reduction." Id. §7411(b)(5). In other words, the Administrator must leave the decision of the control technology to meet the NSPS to the source owner or operator. Another subsection of the provision directs EPA to publish information on pollution control techniques for categories of NSPS sources. Id. §7411(b)(3)(emphasis added).

C. a. Promulgation of Regulations for ~~§111(d)~~ Noncriteria Air Pollutants

Section 111(d) directs the Administrator to promulgate regulations for the submission of state plans for existing sources of noncriteria pollutants, unregulated by the Act, to which NSPS under subsection (b) would apply were they new sources. Id. §7411(d)(1). The provision states:

Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this section to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies. Id. §7411(d)(1).

(i) Revision of NSPS Upon Petition by a State Governor

Section 111(g) requires EPA's Administrator to revise the list of regulated new source categories and standards of performance for such source categories upon a state governor's petition which demonstrates that any excluded category of sources (including minor sources) may reasonably be anticipated to endanger the public health and welfare or that the existing NSPS no longer reflects "the greatest degree of emission limitation achievable through application of the best (available) technological system of continuous

emission reduction....” Id. §7411(g)(2), (4). Such a determination shall take into consideration "the cost of achieving such emission reduction, and any non-air quality health and environmental impact and energy requirements . . . ." Id. §7411(g)(4)(B).

(ii) Promulgation of Alternative Design, Equipment, Work Practice, or Operational Standards

If the Administrator determines that it is not feasible to prescribe or enforce a standard of performance, he may promulgate instead a design, equipment, work practice, or operational standard, or combination thereof, which reflects "the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated." Id. §7411(h)(1) (emphasis added). This subsection of the Act defines the phrase "not feasible to prescribe or enforce a standard" to include a situation in which the Administrator determines that "the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations." Id. §7411(h)(2)(B).

(iii) Waivers for Innovative Technologies

EPA's Administrator, with the consent of the Governor of the state in which a new source is to be located, may grant a ~~§111~~ waiver for innovative technology if he determines among other factors that:

the proposed system will operate effectively and there is a substantial likelihood that such system or systems will achieve greater continuous emission reduction than that required to be achieved under the standards of performance which would otherwise apply, or achieve at least an equivalent reduction at lower cost in terms of energy, economic, or nonair quality environmental impact . . . . Id., §7411(j)(1)(A)(ii) (emphasis added).

A waiver under this subsection may be extended to such a date as determined by the Administrator, in consultation with the owner or operator of the proposed source, that takes "into consideration the design, installation, and capital cost of the technological system or systems being used." Id. §7411 (j)(1)(D)(i). An approved extension will set forth federally enforceable applicable interim emissions limits and compliance schedules. Id., §7411(j)(2)(B).

## **b. Legislative History**

### (i) Establishment of NSPS

Congress clearly intended the Administrator to consider economic factors in determining the best technological system of continuous emission reductions for New Source Performance Standards under Section 111. In describing this provision as it appeared in H.R. 10498, Congressman Rogers stated:

Section 111, requiring the Administrator to revise the current lax new source performance standards so those performance standards actually reflect the pollution reductions that can be achieved by the best technological systems of continuous emission reduction. In determining which are the best systems of control - and I think Members will be interested in this - the Administrator is directed to consider costs, energy requirements, and other nonair environmental impacts. House Debate on H.R. 10498, 94th Cong., 2d Sess. at 7 L.H. 6152, (1977).

During the 91st Congress, Congressman Ryan of New York introduced an amendment to exclude considerations of cost in setting NSPS. He stated:

I believe that the threat to our environment is so great that, as a matter of public policy, industry should be required to use the most advanced technology regardless of whether or not a particular industry finds it economically feasible. 116 Cong. Rec. 19242-43 (1970).

This amendment was rejected by voice vote during the House Debate on H.R. 17255. Rejection of this amendment indicates Congressional commitment to balancing economic costs with environmental benefits in the promulgation of NSPS.

The Senate Report on S.4358 clarifies the definition of available control technology within the bounds of economic feasibility. It states:

This does not mean that the technology must be in actual, routine use somewhere. It does mean that the technology must be available at a cost and at a time which the Secretary determines to be reasonable. The implicit consideration of economic factors in determining whether technology is "available" should not affect the usefulness of this section. The overriding purpose of this section would be to prevent new air pollution problems, and toward that end, maximum feasible control of new sources at the time of their construction is seen by the committee as the most effective and, in the long run, the least expensive approach. S. Rep. No. 91-1196, 91st Cong., 2d Sess. at 1 L.H. 416, (1970).

The legislative history to the 1977 amendments clarifies that NSPS are a technology-based standard, and states options to use untreated fuels alone or intermittent or alternative control measures are unacceptable means of compliance with the applicable NSPS. The House Report states about the 1977 amendments:

The amendment makes several significant changes of existing law. First, it clarifies that intermittent or alternative control measures are not permissible means of compliance. Second, it indicates that adequately demonstrated technology is to be the basis of the standard, not merely reliance on use of untreated fuels. (One change from last year's bill is clarifying. It indicates that in determining best technology consideration is to include precombustion treatment of fuels.) Third, it requires the Administrator to take into account energy requirements (in addition to costs) in determining which technologies have been adequately demonstrated. Fourth, it requires the Administrator to consider nonair quality health and environmental impacts in making that determination. H.R. 95-294, 95th Cong., 2d Sess., 2 L.H. 2478 (1977).

(ii) Designing Source Categories for Application of NSPS

The 1970 Senate Report listed 19 categories of sources which the Administrator was expected to regulate first. See Federal Environmental Law at 1105.

(iii) Designation Controls for Meeting NSPS

The legislative history of the 1970 amendments manifests Congressional concern that the administrator should not make choices for industry on how NSPS are to be achieved. As the Senate Report on S.4358 indicated:

The secretary should not make a technical judgment as to how the standard should be implemented. He should determine the achievable limits and let the owner or operator determine the most economic, acceptable technique to apply. S. Rep. No. 91-1196, 91st Cong., 2d Sess. at 1 L.H. 417 (1970).

(iv) Guidelines for Section 111(d) Noncriteria Pollutants

Congress directed EPA in promulgating guidelines for states' regulation of §111(d) noncriteria pollutants to establish available means of emission control (not necessary technological) as the basis for those standards and to advise states to weigh the remaining useful life of existing source in setting new performance standards for those categories. See, U.S. House, Rep. No. 95-504, 91st Cong., 2d Sess., 2 L.H. 509 (1970).

(v) Applications by Governors for NSPS Exemptions

No legislative history is relevant to this issue.

(vi) Alternative Controls, Work Practices, Etc.

See, subsection (iii) above.

(vii) Waivers for Innovative Technologies

The conference bill limited the waivers for innovative technologies from ten years to five years and required the administrator to weigh the risk of granting such waiver against the economic benefit of a proven new technology. See, C.R.S. Section-by-Section Analysis of S.252 and S.253, 95th Cong., 1st Sess., at 5 L.H. 3898 (1977).

**c. Case Law**

(i) Development of New Source Performance Standards

There is considerable case law discussing EPA's consideration of economic factors in the development of new source performance standards. See, e.g., Sierra Club v. Costle, 657 F.2d 298 (D.C. Cir., 1981); National Lime Association v. EPA, 627 F.2d 416 (D.C. Cir., 1980); National Asphalt Pavement Association v. Train, 539 F.2d 775 (D.C. Cir., 1976); Essex Chemical Corp. v. Ruckelshaus, 486 F.2d 427 (D.C. Cir.), cert. den'd, 416 U.S. 969 (1973); Portland Cement Association v. Train, 513 F.2d 506 (D.C. Cir.) cert. den'd, 423 U.S. 1025 (1975).

Most of this case law reflects the Court's definition of the two phrases in Section 111(a) of the Act, "adequately demonstrated" and "achievable." In Essex Chemical Corp. v. Ruckelshaus, supra, a chemical company challenged EPA's NSPS for recyclable acid plants. The Court held with respect to the promulgation of an NSPS:

An adequately demonstrated system is one which has been shown to be reasonably reliable, reasonably efficient, and which can reasonably be expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way. An achievable standard is one which is within the realm of the adequately demonstrated system's efficiency and which, while not at a level that is purely theoretical or experimental, need not necessarily be routinely achieved within the industry prior to its adoption. Id., at 433-434.

In Portland Cement Association v. Ruckelshaus, supra, the cement manufacturers sought review of the NSPS for Portland cement plants on the grounds that an environmental impact statement (EIS) had not been filed under the National Environmental Policy Act (NEPA). In dismissing the need for an EIS, the D.C. Circuit held that the requirements of Section 111 were the "functional equivalent of NEPA" in mandating the Administrator to weigh the environmental and economic effects of a proposed performance standard. Id., at 384-385.

The court rejected the argument in Portland Cement that the Agency must conduct a quantified cost-benefit analysis in promulgating a NSPS. In responding to the cement companies' argument that the Administrator had not adequately considered economic costs to the industry of the application of the standard, the Court found that an EPA Background Document entitled, "The Financial Impact of Air Pollution Control Upon the Cement Industry," showing a 7 percent increase in annual operating costs over the industry which would be absorbed by consumers without adverse impact on the industry was sufficient to satisfy the Act. Its opinion stated:

However desirable in the abstract, such a requirement would conflict with the specific time constraints imposed on the administrator. The difficulty, if not impossibility, of quantifying the benefit to ambient air conditions, further militates against the imposition of such an imperative on the agency. Such studies should be considered by the Administrator, if adduced in comments, but we do not inject them as a necessary form of action. Id., at 387.

The Court, however, stated that on remand of the standard to EPA, the Administrator must consider "the possible effect of the standards on the future building of wet-process plants generally, and . . . possible unfair discrimination between standards set for cement plants, and those set for power plants and incinerators." Id., at 388-89.

The D.C. Circuit also addressed the meaning of the phrase "technological availability" in the Portland Cement case. It rejected the suggestion of the cement manufacturers that the phrase "adequately demonstrated" in Section 111(a) of the Act implied that any existing plant be able to meet the proposed standard. It held that: " 'Adequately demonstrated' does not mean that existing asphalt concrete plants must be capable of meeting the standard; to the contrary, '[s]ection 111 looks toward what may fairly be projected for the regulated future, rather than the state of the art at the present . . . ' " Id., at 391.

National Asphalt Pavement Association v. Ruckelshaus, supra, also considered the issue of economic feasibility in a challenge to EPA's designation of the asphalt pavement industry as a "significant" polluter under §111(b). In upholding the NSPS applicable to the industry, the Court held that an "achievable" standard must be one "which can reasonably be expected to serve the interests of pollution control without becoming exorbitantly costly in an economic or environmental way." Id., at 786.

Two more recent cases, National Lime Association v. EPA and Sierra Club v. Costle, supra, develops the reasoning of these earlier decisions on Section 111. In the case of the NSPS for lime manufacturers, the D.C. Circuit remanded the standard to the Agency on the basis that it failed to consider the industry as a whole in its data sample and had failed to follow Agency guidelines requiring consideration of "feedstocks, operations, sizes and ages of sources." Lime Manufacturing Ass'n v. EPA, supra, at 432-33. In dicta, the Court pointed out that EPA has responsibility for "facts pertinent to the standard's feasibility (that) are available and easily discoverable by conventional technical means." Id., at 454. In an interesting aside, the Court also remarked on the issue of additional testing:

We recognize, for example, that the finding of facts, especially through elaborate testing, is costly and the costs of additional testing may be added by the Agency to the costs of delay in issuing the proposed rule and the sum of these costs weighed against the benefit of proposing a rule without 'additional data. We leave to the Agency on remand the decision whether additional Agency-conducted testing is appropriate in this case. Id., at 454-55.

In Sierra Club v. Costle, challenging EPA's NSPS for coal burning power plants as being too lax, the D.C. Circuit most recently found it proper for EPA to apply econometric computer models to forecast the future economic and social impacts of alternative NSPS for the industry. Id., at 332. It also embraced EPA's inclusion in its standard-setting calculus of how "NSPS options would affect the development of new technologies which have economic, energy and environmental implications on their own." Id., at 347.

(ii) Listing of Source Categories to Which NSPS Apply

Two court rulings have examined the issue of the promulgation of different NSPS for particular industry categories pursuant to Section 111(b) of the Act. In 1973, the D.C. Circuit considered whether a .03 performance standard for Portland cement plants and a .10 standard for power plants unfairly discriminated against Portland cement companies. The Court held that EPA was not required to present affirmative justifications for different standards in different industries, since these standards were based on different economic and technical factors. Portland Cement Ass'n v. Ruckelshaus, supra, at 388-89. On a related case, the same court accepted the Administrator's designation of a particular source category as "significantly" contributing to TSP pollution, despite claims from manufacturers that represented a small percentage of pollution from TSP sources. "That determination," according to the Court, "is based on the Administrator's examination of the rate of emission of particulate matter from uncontrolled plants, the stringency of existing state and local regulations limiting emissions from these plants, the number of existing plants, and the expected rate of growth in the number of plants." National Asphalt Pavement Ass'n v. EPA, supra, at 784 (emphasis added).

(iii) Designation of Technologies for Meeting NSPS

There is no relevant case law.

(iv) Regulations for Promulgation of Standards for Section 111(d)  
Noncriteria Pollutants

There is no relevant case law.

(v) Governor's Petition for Revision of Standards or List of Source Categories

There is no relevant case law.

(vi) Equipment, Work Processes, Operational Standards, Alternative Emission Limitation

In ASARCO Inc. v. EPA, 578 F.2d 319 (D.C. Cir., 1978), the D.C. Circuit struck down EPA regulations that allowed owners and operators of sources subject to Section 111 to use alternative emission limits (the "bubble") to meet NSPS. The "bubble" concept was designed by EPA to give plant managers flexibility to use the cost-effective intrafacility (and interfacility) application of pollution controls and techniques (including work practices and operational standards) to achieve point-by-point emissions reductions over the entire plant. Judge Skelley Wright's opinion rejected EPA's argument that use of the "bubble" was necessary to provide flexibility in applying the NSPS to modified facilities because the cost of bringing existing facilities into compliance with NSPS was greater than the cost of bringing new facilities into compliance:

The record does not show that any version of the bubble concept is needed to provide flexibility to the operators of existing facilities. . . . The record does not indicate why more flexibility than this is necessary or even appropriate. Even if flexibility were a problem, the statute on its face allows for cost considerations to be taken into account in setting NSPSs, rather than determining whether the standards will apply to whole plants or to individual facilities within those plants. . . . We therefore agree with the Sierra Club that EPA's regulations incorporating the bubble concept are inconsistent with the language and purpose of the statute and cannot be justified by any alleged need for flexibility. Id., at 328-29.

EPA is currently drafting a "bubble" policy to allow owners and operators to "overcontrol" emissions at one new source in exchange for "undercontrolling" emissions at another new source within a facility. See, National Air Pollution Control Techniques Advisory Committee, NSPS Bubble Issues, June 16-17, 1982. In this manner, the Agency hopes to rise above the ASARCO Court's objections.

(vii) Waivers for Innovative Technologies

There is no relevant case law.

**1. National Emission Standards for Hazardous Air Pollutants - Section 112**

**a. Statutory Directive**

EPA's Administrative is directed to promulgate national emission standards for hazardous air pollutants (NESHAPs) pursuant to section 112 of the Act. 42 U.S.C.

§7412. A NESHAP is defined by the statute as:

an air pollutant to which no ambient air quality standard is applicable and which in the judgment of the Administrator causes, or contributes to, air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness. Id., §7412(a)(1).

The Administrator must set the standard at the level that in his judgment will “provide an ample margin of safety to protect the public health from such hazardous air pollutant.” Id., §412(b)(1)(B). Significantly, the section does not direct EPA to consider the costs associated with control in choosing the requirements that provide an “ample” safety margin.

Section 112(b) also authorizes the Administrator to issue information on NESHAPs pollution control techniques. Id. §7412(b).

There may be some flexibility for considerations of costs in granting NESHAPs exemptions under section 112(c). 42 U.S.C. §7412(c). In very limited situations, the Administrator is empowered to temporarily exempt certain facilities from compliance with the emission standard “if he finds that such period is necessary for the installation of controls” and that steps will be taken during the period of waiver to assure that the health of persons will be protected from imminent endangerment.” Id., §7412(c)(1)(B)(ii) (emphasis added). The construction of the word “necessary” however, may be limited to

claims of technological rather than economic necessity. Under subparagraphs (c)(2) it is clear that the President's authority to exempt sources from NESHAPs is limited to situations where "he finds that the technology to implement such standard is not available." Id., §7412(c)(2).

If in the Administrator's judgment it is not feasible to prescribe or enforce a NESHAPs, he may instead promulgate a design, equipment, work practice or operational standard, or combination thereof, which in his judgment is adequate to protect the public ...from such pollutant with an ample margin of safety." Id. §7412(e)(1). The statute defines the phrase "not feasible to prescribe or enforce an emission standard" as:

any situation in which the Administrator determines that (A) a hazardous pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant, or that any requirement for, or use of, such a conveyance would be inconsistent with any Federal, State, or local law, or (B) the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations. Id., §7412(e)(2) (emphasis added).

At such time as a standard becomes feasible to promulgate and/or measure, the Administrator must promulgate and enforce it. Id., §7412(e)(4).

#### b. Legislative History

There is no legislative history on the consideration of economic costs in setting NESHAPs. Generally, silence on the consideration of costs is interpreted to reflecting Congress' purposeful intent that EPA consider only health-related information in setting a standard under the Clean Air Act. See, *Union Electric Co. v. EPA*, 427 U.S. 246 (1976). There is legislative history, however, that Congress considered and approved the closure of companies that could not achieve compliance with a NESHAPs. See, S. Rep. No. 1196, 91st Cong., 2d Sess. at 20 (1970). In addition a summary of the conference report, presented to the Senate by Senator Muskie, stated:

The standards must be set to provide an ample margin of safety to protect the public health. This could mean, effectively, that a plant would be required to close because of the absence of control techniques. It could include emission standards which allowed for no measurable emissions.

There is, similarly, no relevant legislative history on the definition of "ample margin of safety." It can be argued that the term "safe" contemplates not absolute safety, but a balancing of risks and costs. This argument ignores the clear distinction in the Clean Air Act between the sections that explicitly contemplate balancing and the sections from which balancing language is conspicuously absent. In addition, Congress generally has felt it necessary to use words such as "unreasonable" or "feasible" to indicate that costs be considered when such a policy was desired. It seems clear that when Congress in the Clean Air Act wanted only health factors considered, it uses an unqualified word like "safe," and when it wants costs considered also, it uses phrases like "unreasonable risk."

With respect to the addition of subsection (e) to the Act in 1977 (relating to alternative work control practices), the conference committee report on the 1977 amendments stated that economic costs of compliance were not to be considered:

The language in this section with respect to technological or economic limitations defines what is not feasible only for purpose of prescription or enforcement by EPA. U.S. House, Rep. No. 95-564, 95th Cong., 1st Sess. at 4 L.H. 511 (1977).

### **c. Case Law**

There is no relevant case law concerning the use of economic assessments in fashioning NESHAPs. However, the legality of cost-qualified BACT standards in the promulgation of EPA's vinyl chloride standard were challenged by the Environmental Defense Fund (EDF). EDF v. Train, No. 76-2045 (D.C. Cir., filed Nov. 19, 1976, settled and dismissed June 24, 1977). Generally EDF argued that EPA should at least have a long-term "goal" of entirely eliminating carcinogenic emissions under §112 if it did take costs into consideration in setting the standard. The settlement of the suite wrought an

agreement that EPA would periodically review and revise the vinyl chloride standard, tightening it to reflect advances in controls. See, 42 Fed. Reg. 29005 (1977) revised standard.

## **2. Prevention of Significant Deterioration - Section 107**

### **a. Statutory Directive**

The 1977 amendments to the Clean Air Act added Part C to Title I intended to prevent significant deterioration (PSD) of areas of the country cleaner than the national ambient standards where there is insufficient data to determine air quality. Pub. L. 95-95 U.S.C. §§7470-7491. The program required by Part C applies to all increases of emissions (beyond de minimis amounts) of any pollutant from major new sources or modifications located in an area classified as "attainment" or "unclassifiable" pursuant to Section 107 of the Act. The major elements of the PSD program are:

- o provisions for the initial classification of "clean" air quality control region as Class I and Class II PSD areas, CAA 5162; 42 U.S.C. ~~§§7472~~;
- o establishment of maximum allowable increases of emissions over baseline concentrations ("increments") and maximum allowable concentrations ("ceilings") for sulfur oxides and particulate matter, CAA 3163, 42 U.S.C. 57473;
- o provisions relating to the authority of states, federal land managers, and Indian tribes to redesignate areas, CAA, ~~§164~~; 42 U.S.C. ~~§7474~~.
- o requirements for preconstruction permit programs for major emitting facilities in areas to which Part C applies, CAA ~~§165~~, 42 U.S.C. 57475;
- o directives to states to design PSD programs for other pollutants;
- o enforcement provisions (where relevant this provision will be discussed in the "enforcement" section of this paper;
- o a program for transition from federal to state management of the PSD programs; and,
- o measures for protecting visibility in federal Class I areas.

Few of the statutory directives in the PSD program expressly allow for consideration of economic assessments. They are generally concerned with strict observance of

"air quality values." The three exceptions are the provisions concerning the requirement for (i) "best available control technology (BACT)" on new major emitting facilities locating in attainment areas; (ii) best available retrofit technology for any federal major source operating in each Class I area; and, (iii) the analysis to be prepared by applicants for redesignation of a PSD area. Economic factoring is also implicit in "netting" and the preparation of a PSD SIP.

(i) BACT

Sections 161, 163 and 165 set out requirements applicable to new sources and major modifications of existing sources in PSD areas. No new construction may be commenced after August 7, 1977 unless, among other requirements, a permit to construct is issued by the respective authority, air quality modeling analysis are submitted, the owner or operator of the proposed facility demonstrates that new emissions will not cause a violation of an applicable NAAQS or increment or any other federal (and state) requirement and the proposed facility is equipped with the best available control technology (BACT) for each pollutant which results from the proposed facility (exceeding de minimis amounts). 42 U.S.C. 57475. BACT is set for each source on a case-by-case basis and the statute defines it as:

an emission limitation based on the maximum degree of reduction of each pollutant of reduction of each pollutant subject to regulation under this Act. . . which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such facility . . . . In no event shall application of BACT result in emissions (which exceed any federal new source performance standard or hazardous emission standard). 42 U.S.C. ~~57479~~(e) (emphasis added).

(ii) Best Available Retrofit Technology

State SIPs must provide for application of "best available retrofit technology" for existing sources affecting visibility and located in federal Class I areas "as expeditiously as practicable." The statute states:

in determining best available retrofit technology the state (or the Administrator in determining emission limitations which reflect such technology) shall take into consideration the costs of compliance, any existing pollution control technology in use at the source, the remaining useful life of the source, and the degree of improvement in visibility which may reasonably be anticipated to result from the use of such technology." 42 U.S.C. §7491(g)(2).

The term "as expeditiously as practicable" is defined as "expeditiously as practicable but in no event later than five years after the approval of a plan revision under this section." 42 U.S.C. 57491 (g)(4).

(iii) Analysis for Redesignation of PSD Areas

Section 164(b)(1)(A) imposes a "satisfactory description and analysis of health, environmental, economic, social, and energy effects" of any proposed redesignation of any PSD areas. Such information is to be available for public inspection and to be examined by the redesignating authorities. 42 U.S.C. §7474(b)(a)(A).

(iv) Definition of "Major Modification"

Pursuant to the definition of "major modification" in the PSD regulations, EPA has implemented netting. Section 169(a) defines "major emitting facility" as a "stationary source" that meets certain specified criteria and as "any" other source meeting other criteria. Part C of the Act, however, does not define either "stationary source" or "major modification." EPA has applied the definitions of both these terms under Section 111 of the Act (or new source performance standards) to the PSD program. Thus, EPA defines the term "stationary source" as "any building, structure, facility or installation which emits or may emit any pollutant." 42 U.S.C. §7411(a)(3). It defines major modification as "any physical change in, or change in the operation of a stationary source which increases the amount of any pollutant emitted by such source." 42 U.S.C. §7411(a)(4).

(v) "Netting" in PSD Areas

EPA's PSD regulations allow an owner or operator of a source to average all the increases and decreases of emissions from pieces of equipment within a plant over five years in order to determine the application of the PSD program's preconstruction review requirements. 40 C.F.R. §51.2. If the net increase in emissions, taking into account all such "contemporaneous" increases and decreases does not exceed the "significance levels" for each pollutant set in the regulations, then a source may effectively avoid BACT review under the law. This "netting" concept, as it is called by EPA, has been used fairly extensively by plant operators to utilize cost-effective pollution control technologies within a plant by overcontrolling emissions at points where it is cheap to do so in lieu of controlling emissions at other points where it is more expensive.

(vi) Requirements for PSD SIPs

Section 161, requires each SIP to contain "emissions limits and such other measures as may be necessary" as determined under EPA regulations to prevent significant deterioration of clean air areas. 42 U.S.C. 57471. As in designing their SIPs to meet national ambient air quality standards, states are afforded considerable latitude in designing and allocating increments for pollutants in their PSD SIPs. While sections 163 and 165 and EPA's regulations set forth minimum requirements for permit programs, states may consider BACT determinations on a case-by-case basis and such other measures that are necessary to achieve the goals of the Act, taking into consideration economic as well as other factors.

**b. Legislative History**

(i) BACT

There is abundant legislative history indicating Congressional intent to require economic assessments in determining and implementing "best-available control technology" (BACT) under section 155. In the Senate Debate on S.252 Senator Randolph, a co-sponsor of the bill, noted that the BACT provision should consider economic concerns. He stated that:

The use of best available control technology would be required [(section 165(a)(4)] but that is the ultimate goal for any antipollution measure. Moreover, the nondeterioration section also specifies that consideration be given to the energy, environmental, and economic consequences of proposed control and technology requirements. Senate Debate on S.252, June 8, 1977, 95th Cong., 1st Session at 3 L.H. 775, (1977).

However, during the debate on the Senate bill, Senator Muskie emphasized the need for stringent emissions controls in designing BACT. He stated:

One of the cornerstones of a policy to keep clean air areas clean is to require that new sources use the best technology available to clean up pollution. It is important to assure that new, improved technology is applied as it is developed. And it is important to provide incentives to improve pollution control systems.

To encourage this result, the bill requires the use of pollution control systems which achieve the maximum degree of continuous emission reduction, determined by the states on a case-by-case basis. The states are authorized to take into account energy, environmental, and economic impacts and other costs in reaching their determination. Such an approach should provide greater emission reductions and allow more rapid application of improved technology than would otherwise occur through uniform application of the new source performance standards periodically promulgated - and seldom changed - by the Environmental Protection Agency. Senate Debate, op. cit. at 3 L.H. 728, (1977).

This theme occurs throughout the 1977 amendment's legislative history. For instance in the House Report on H.R. 6161 the Interstate and Foreign Commerce Committee reported:

Questions have arisen regarding the potential effect on short- and long-term economic growth from various prevention of significant deterioration proposals. In general, these questions do not apply to the committee's proposal which reflects a balanced approach not only protecting public health and welfare but also assuring future air resources will be available for continuing the industrial and energy development so necessary for the growth of the Nation.

It concluded that under H.R. 6161:

The committee's proposals on significant deterioration and best available control technology provide for more economic and industrial growth than do the current regulations. House Rept. No. 95-294, 95th Cong., 1st Sess. at 4 L.H. 2621-2622 (1977).

The House Subcommittee on Health and Environment, in considering H.R. 10498, also underlined the need to balance economic development and prevention of significant deterioration:

The House Subcommittee proposal for prevention of significant deterioration provides for a program in which state and local governments (not the Federal EPA) will consider the multiple objectives of minimizing air pollution increases in clean air regions and providing for stable, long-term commercial, industrial and energy development. The House bill rejects the arguments of no growth proponents and of proponents of unlimited pollution in clean air areas, refusing either to lock up our clean air regions or to allow the air in those regions to become as dirty as in our industrial cities. This legislation does not dictate a Federal response to balancing sometimes conflicting goals. Nor does it dictate what the state and local decisions must be. Rather, it provides for a fair and open process in which the state and local governments closest to the people will be free to carry out the reasoned balancing of competing goals and needs. Statement of the Subcommittee on Health and Environment on H.R. 10498, 94th Cong., 2d Sess., November 10, 1975, 7 L.H. at 6087 (1977).

(ii) Redesignation of PSD Areas

The legislative history contains merely a restatement of the requirement of Section 164 as it was presented in House Report on H.R. 6161:

(iii) Netting

No legislative history is relevant to this issue.

(iv) State Implementation of PSD Program

The legislative history indicates Congressional intent to give states flexibility in weighing various factors, including economics, in implementing section 165. The Senate report on S.252 addressed this point:

The decision regarding the actual implementation of best available technology is a key one, and the committee places this responsibility with the state, to be determined in a case-by-case judgment. It is recognized that the phrase has broad flexibility in how it should and can be interpreted, depending on site.

In making this key decision on the technology to be used, the State is to take into account energy, environmental, and economic impacts and other costs of the application of best available control technology. The weight assigned to such factors is to be determined by the State. Senate Rep. 95-127, 95th Cong., 1st Sess at 3 L.H. 1405, (1977).

To emphasize flexibility implicit in this provision, the analysis continues:

Similarly, when an analysis of energy, economics, or environmental considerations indicates that the impact of a major facility could alter the character of that community, then the State could, after considering those impacts, reject the application or condition it within the desires of the state or local community. Flexibility and state judgment are the foundations of this policy. Id.

**c. Case Law**

(i) BACT

No case law is relevant on this issue.

(ii) Best Available Retrofit Technology

In *Alabama Power v. EPA*, 13 E.R.C. 1093 (D.C. Cir. 1979) (hereafter "Alabama Power II"), the Circuit Court Of Appeals for the District of Columbia affirmed the importance of economic considerations in determining the best available technology for retrofitting existing facilities in federal Class I areas affecting visibility. The Court pointed out as well that Congress never intended for visibility to be the exclusive embodiment of congressional concern for the appearance of air. 13 ERC at 2049.

(iii) Analysis for Redesignation of PSD Area

No case law has been decided on this issue.

(iv) Definitions of "Major Emitting Facility" and "Major Modification"

The D.C. Circuit Court ratified the use of "netting" in Alabama Power II, supra. It concluded that interpreting the word "increases" in the definition of modification to mean any increase in pollution from a separate component of a modification or from an individual point of a plant was unreasonable because it would subject even routine alterations of a plant to PSD review. The Court held that interpreting "increases" as net increase was consistent with the purposes of the Act. It ruled that this holding affected the application of both substantive and procedural requirements of PSD review. Id. at 20445.

(v) Requirements for PSD SIPs

In the Alabama Power II decision, the court also held that states have considerable flexibility in designing PSD SIPs to accommodate economic and other social concerns, so long as the requisite parts of the plan entailed by Sections 163 and 165 of the Act are met. However, it held that while a SIP must contain emission limits and other such measures as may be "necessary" to prevent significant deterioration of air quality, if major new source review is not sufficient because of minor source emissions, general regional growth, or other reasons, the state is obligated to go beyond the statutory directives to protect air quality. Id. at 2001.

## **6. Requirements for Nonattainment Areas**

### **a. Statutory Directives**

Part D of the Clean Air Act sets forth provisions for nonattainment SIPs, and it establishes deadlines for submission of such SIPs and deadlines for achievement of "the national ambient air quality standards." This part applies to all areas where one or more of the NAAQS is exceeded. Major elements of the nonattainment program provide for:

- o expeditious attainment of the NAAQS by no later than December 31, 1982;
- o extension of attainment deadlines of the NAAQS for ozone (O<sub>3</sub>) and carbon monoxide (CO) under special conditions until December 31, 1987. CAA §172(a)(2), 42 U.S.C. §7502(a)(2);
- o requisite elements for approval of nonattainment SIPs, CAA §172(b), 42 U.S.C. §7502(b), and nonattainment permit programs. CAA §173, 42 U.S.C. §7503(b);
- o deadlines for the submission of 1982 attainment SIPs no later than June 30, 1979; deadlines for the submission of [ozone and CO] 1987 SIPs no later than June 30, 1982. CAA §§110(a)(2)(I), 172(c), 42 U.S.C. §§7410(a)(2)(I), 7502(c);
- o state and local technical assistance grants; and,
- o sanctions for failure to submit SIPs, implement SIPs, and/or achieve the NAAQS.

Economic assessments are relevant to four provisions of, Part D: i) extension of attainment deadlines; ii) substantive requirements for Part D SIPs; iii) analyses of SIP revisions implementing Part D; and iv) application of sanctions. In addition, implementation of the offset interpretative ruling attaches economic value to accommodating new source growth in nonattainment areas.

#### (i) Extension of Attainment Deadlines

Section 172(a)(2) allows EPA's Administrator to grant extensions of the deadlines for attainment of the NAAQS for ozone and carbon monoxide up until December 31, 1982 if the state can demonstrate that such attainment is not possible in an area despite the

implementation of all "reasonably available measures." 42 U.S.C. **§7502(a)**. A key issue in the scope of economic assessment in deadline emissions is whether "reasonably available" incorporates the concept of economic feasibility.

(ii) Substantive Requirements for Part D SIPs

Section 172(b) states that for approval, nonattainment SIPs must, among other requirements:

- o provide for the implementation of all reasonably available control measures as expeditiously as practicable, 42 U.S.C. **§7502(b)(2)**; and,
- o require, in the interim, reasonable further progress . . . including such reductions in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology. . . . 42 U.S.C. **§7502(b)(3)**;
- o require permits for the construction and operation of new or modified major stationary sources in accordance with section 173; and
- o contain emission limitations, schedules of compliance and such other measures as may be necessary to meet the requirements of this section. 42 U.S.C. **§7502(b)(8)** (emphasis added).

The definition of the term "reasonable further progress" (RFP) appears to allow the responsible air pollution control authority considerable latitude to consider economic factors in designing the nonattainment SIP. The statute defines RFP as the:

annual incremental reductions in emissions of an applicable air pollutant . . . which are sufficient in the judgment of the Administrator, to provide for attainment of the applicable national ambient air quality standard. . . . 42 U.S.C. **§7501(1)**.

The state (or local) air pollution control authority can consider a mix of strategies in making the state's annual RFP demonstration including emission limits on existing sources, new technology, turnover credits for shutdowns of older facilities, new "cleaner sources" accommodated through offsets, calculations of growth margins, transportation and mobile source controls and other measures.

The SIP must require application of reasonably available control technology (RACT) where appropriate. For sources for which RACT standards have not been promulgated, case-by-case RACT determinations can be made in instances as in the implementation of alternative control strategies (bubbles).

### (iii) Offset Provisions and Accommodating New Growth

Congressional incorporation of the "offset" concept in Section 173 of the Act was an implicit recognition of the need for balance between air quality values and economic values in the Act. Section 173 sets forth four requirements for preconstruction permits for major new sources and modifications in nonattainment areas. 42 U.S.C. 37503. These include application of LAER (discussed below), compliance of all commonly owned sources in the state, demonstration that the applicable SIP is being carried out, and emissions offsets such that total allowable emissions from existing sources in the region . . . will be sufficiently less than the increase in emissions from the proposed source to adequately demonstrate RFP in the area.

EPA's revised Interpretative Offset Ruling, 44 Fed. Reg. 3274 (Jan. 16, 1979) allows states discretion in arriving at its "offset ratio" for accommodating new growth. In addition to offsets, states may provide growth allowances in their SIP to be used in lieu of or in addition to a state's offset provisions so long as emissions from a major new source or modification do not violate a NAAQS or impair the state's RFP demonstration. 42 U.S.C. §7502(b)(5).

The nonattainment area permit program outlined in section 173 requires that emissions from major new sources be offset by reductions in emissions elsewhere, that the new source meet the "lowest achievable emission rate" (LAER), that all other sources owned by the proposer of the new source in that state be in compliance with all Clean Air Act requirements and that the nonattainment area SIP be in the process of implementation. A state has little flexibility to consider economic feasibility in the

selection of LAER. The definition of LAER does not expressly mention economic factors. The statute states:

The term "lowest achievable emission rate" means for any source, that rate of emission which reflects:

- (A) the most stringent emission limitation which is contained in the implementation plan of any state for such class or category of source, unless . . . not achievable, or
- (B) the most stringent emission limitation which is achieved in practice by such class or category of source, which ever is more stringent. 42 U.S.C. §7501(3).

The term "achievable", while it may mean economic feasibility, probably means technical feasibility (see below).

(iv) Analyses in Nonattainment SIP

Section 172(b)(9) states the Nonattainment SIP shall include:

- (A) an identification and analysis of air quality, health, welfare, economic, energy, and social effects of the plan provisions required by this subsection and of the alternatives considered by the state, and
- (B) a summary of the public comment on such analysis . . . 42 U.S.C. §7502(9).

(v) Applications of Sanctions

It is not clear whether EPA can balance economic costs against health considerations in applying the sanctions under the Clean Air Act. Section 172(a)(1) states that the SIP must provide for attainment of primary NAAQS no later than December 31, 1982 for SO<sub>2</sub>, TSP and NO<sub>x</sub>. Section 110(a)(2)(I) requires construction bans for major new sources and modifications to be applied after June 30, 1979 unless the applicable SIP meets the requirements of Part D. 42 U.S.C. §7410(a)(2)(I). In addition, Section 176(a) triggers the application of nonattainment sanctions withholding Clean Air Act and certain highway funds in any region where:

- (1) a primary NAAQS has not been attained (for CO,  $\text{NO}_x$  or HC);
- (2) where transportation control measures are necessary for attainment; and
- (3) where the Administrator finds the Governor has not submitted an approvable SIP or that reasonable efforts toward submitting such a SIP are not being made. See, 42 U.S.C. **§7506(a)** (emphasis added).

**b. Legislative History**

- (i) Extensions in Attainment Deadlines for CO and HC Sources

No relevant material.

- (ii) Substantive Requirements

The Congress provided ample flexibility to states to balance economic and environmental risks in demonstrating annual reasonable further progress toward attainment of the Act's ambient air standards. The primary focus of this flexibility is in a state's determination of "reasonably available control technology" mandated for existing sources under Part D. For instance in the earlier version of the amendments in the Senate, S. 3219, Senator Buckley outlined the role of the states under this provision:

In considering technology, the state must consider economic and other social factors. But the weight given to those economic factors by any state is wholly discretionary with that state, as is the issuance of any permit under this act. The word "may" is implicit throughout this bill when it details procedures of how the state evaluates best available control technology and the impacts affecting that technology. Each state, of course, retains full flexibility to set as restrict a standard as it may wish in the interest of preserving air quality and/or encouraging as much industrial expansion as would be practicable within the limitations set by the allowable increments of specified pollutants. This language is not intended to encourage a least common denominator approach. It should, over the longer run, encourage technological

flexibility and improvements in technology that are effective from an environmental and economic viewpoint. Senate Debate on S. 3219, July 26, 1976 at 6 L.H. 4953 (1977) (emphasis added).

In another debate on S. 3219, Senator Muskie pointed out that similar flexibility existed with regard to technology-based controls on new sources:

States have full flexibility to weigh factors. This includes insuring long-term growth by leaving room for future sources by requiring improved technology on the first sources who apply. The state cannot require less than the federal new source performance standards.

Beyond that, the state has full flexibility, with guidance that it should maximize emission reductions that are achievable. Senate debate on S. 3219, August 5, 1976 at 6 L.H. 5467, (1977).

In contrast to Congress' intent with regard to BACT, however, the legislative history indicated the role of economics is subsidiary to health concerns in mandating the lowest achievable emission rate (LAER) for new major sources and modifications in nonattainment areas. In a Senate debate on S. 252, Senator Muskie stated that:

The committee adopted the term "lowest achievable emission rate" as the technology-based requirement for new sources or modifications in nonattainment areas in recognition of the fact that, given the risks to public health in such areas, additional pollution sources must be required to minimize their emissions. New sources and modifications must employ systems which achieve the greatest emission reductions possible, even if such systems may be more costly than other less effective systems. In setting new source standards of performance, EPA historically has given considerable weight to cost factors. In the committee's opinion it would be an inappropriate policy to permit costs to be weighted as heavily in defining control requirements in nonattainment areas where public health is at risk. In establishing control system requirements for new modified sources in nonattainment areas, the Administrator is to consider the costs of such systems only to a very limited extent. For example, certain control requirements might be deemed not achievable if the proponent of the source was able to demonstrate that the costs of such controls were so high that the proposed facility could not be operated at a profit. Senate Debate on S. 252, 95th Cong., 1st Sess at 3 L.H. 717, (1977) (emphasis added).

The legislative history, however, indicates that despite the statutory definition of LAER, consideration of costs is not to be totally absent from LAER determinations. The House

report on H.R. 6161 clarifies the intent of Congress in giving some weight to economic considerations. It states:

.the committee adopted the requirement for proposed new or modified major stationary sources in nonattainment areas to meet the lowest achievable emission rate requirement. In the committee's view, this means that the traditional cost constraints on technology for the purpose of section 111 of the act should not govern in this situation. This does not mean that the committee does not consider cost of a relevant factor. It simply means that in light of the foregoing critical factors cost is of somewhat lesser weight in this context. Of course, if the cost of any given technology or means of compliance is so great, that new major stationary sources could not build and operate, then emissions reductions which necessitate use of that technology should not and would not be considered achievable, and could not be required by the Administrator. House Rept. No. 95-294, 95th Cong., 1st Sess. at 4 L.H. 2682, (1977) (emphasis added).

In amending the Act in 1977, Congress devoted considerable attention to the need to accommodate growth in nonattainment areas as well as attain the ambient standards. The House report on H.R. 6161 stated:

maximum pollution control from new sources is necessary in order to permit room for maximum potential economic growth. This is particularly true in light of the requirement for reasonable further progress and the indications that emissions from many existing sources in nonattainment areas will be increasing . . . . House Report No. 95-294, 95th Cong., 1st Sess. at 4 L.H. 2682 (1977).

The Senate also recognized the importance of economic considerations in this provision as it stated:

To cope with this situation and thus avoid imposing a strain on our economic system, the bill contains provisions allowing under certain conditions expansion and modification of facilities in substandard air quality areas. We are careful, however, to avoid permitting indefinite failure to meet air quality standards. It is for this reason that expansion will be permitted only under very carefully drawn conditions which assure first, that air quality will not further deteriorate and, second, that continued progress will be made toward removing pollutants from the air. Senate Debate on S. 3219, July 26, 1976 at 6 L.H. 4948, (1977) (emphasis added).

(iii) Part D SIP Analyses on Economic Impacts

No legislative history specifically explores this provision, although Congress was concerned about the costs to state administrators and industry involved in implementing Part D's provisions.

(iv) Application of Sanctions to States

The legislative history is unclear about whether EPA is to balance factors such as costs and good faith in applying Clean Air Act sanctions to states.

Senate Bill 252 seems most clearly to have influenced the final provision in Section 110(a)(2)(I) of the Act requiring mandatory construction bans where areas lacked "an approved or promulgated revised implementation plan . . . . US. House, Rep. 85-564, Joint Statement of the Conference Committee on H.R. 6161, 95th Cong., 1st Sess. at 4 L.H. 536-537. That bill also contained provisions stating that certain highway funds and air pollution grants may be withheld from states where a governor fails to submit the required plan revision. Id. at 536. Nonetheless the bill, H.R. 6161 that emerged from the conference committee included the words "shall not" to restrict grants, but added that the Administrator must find, among other things, that the state failed to make reasonable efforts" toward submitting a plan. This term is not defined in the Act or discussed in its legislative history.

**c. Case Law**

i) Nonattainment Extensions

There is no relevant case law on this section.

(ii) Substantive Requirements

In *NRDC v. Gorsuch*, 685 F.2d 918, (D.C. Cir. 1982), cert. granted\_\_\_\_L.W. (1983), the D.C. Circuit Court of Appeals held that source owners and operators could

not “bubble” contemporaneous emissions increases and decreases below de minimis amounts within a plant in nonattainment areas, thereby avoiding application of the offset requirement and new source review for obtaining a permit for a major modification. The court dismissed the state’s need for flexibility in designing the nonattainment portion of its SIP, and stated that the purpose of the Act in nonattainment areas is to attain the NAAQS as expeditiously as practicable. This requirement, according to the D.C. Circuit, was violated by allowing individual source's to avoid application of the offset requirement for major modifications.

(iii) Analysis in SIPs

There is no relevant case law.

(iv) Application of Sanctions

There is no relevant case law.

**7. Mobile Source Emissions -Sections 201-233**

**a. Statutory Directive**

Title II establishes a three-pronged regulatory scheme to control air pollution from mobile sources. CAA §§201-233, 42 U.S.C. §§7521-7553. This scheme consists of emissions controls, transportation, and provisions for vehicle inspection and maintenance.

Emissions controls are centered primarily around a vehicle manufacturing certification testing program. CAA 33203, 206, 42 U.S.C. §§7522-7525. In addition, the statute provides for:

- o. production and performance warranties. CAA §§207(c), 42 U.S.C. §7541(c);

- o regulation of fuels and fuel additives. CAA §211, 42 U.S.C. §7545 and
- o direction to EPA to establish requirements for control of fuel evaporative hydrocarbon emissions. CAA §202(b)(1)(c), 42 U.S.C. §7522(b)(1)(c). See 40 C.F.R. Part 86, 43 Fed. Reg. 37973 (1978), 45 Fed. Reg. 28922 (1980).

These regulations also include provisions for waivers of  $\text{NO}_x$  and CO standards for innovative and alternative technologies. CAA §202(b)(6), 42 U.S.C. §751(b)(6).

Secondly, transportation control plans (TCPs) required under Section 110(a)(2)(B) of Title I of the Act were affected by the 1977 amendments which provided for federal funding of TCPs and gave states more flexibility in dealing with issues such as indirect sources, gas rationing, on-street parking and bridge tolls. CAA §§108(f), 110(c), 290, 210; 42 U.S.C. §§7408(f), 7410(c), 7543, 7544.

Thirdly, the 1977 amendments added inspection and maintenance (I/M) procedures to the Act requiring periodic inspection and emissions testing of cars not expected to meet the 1982 deadline for ozone and CO. 42 U.S.C. §7410(a)(2)(G); 42 U.S.C. §7410(a)(2)(g). To receive an extension of the deadline, states must demonstrate that they have implemented I/M programs before 1983. CAA §172(b)(1)(B) 42 U.S.C. §7502(b)(1)(B).

#### (i) Emissions Controls

A number of Title II's mobile sources emission control requirements permit, or require, considerations of economic impact. They, however, appear to provide only for technology-based standards.

In establishing CO, HC, and  $\text{NO}_x$  standards for heavy duty vehicles manufactured between model years 1979-1982, the Administrator must prescribe regulations "which reflect the greatest degree of reduction achievable through the application of technology which the Administrator determines will be available, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers

and to noise, energy, and safety factors associated with the application of such technology.” 42 U.S.C. **§7521(a)(3)(A)(i)**. After 1983, the Act requires mandatory percentage emissions reductions. However, EPA may revise these fixed percentage reductions to apply only for the period of three model years beginning four years after the promulgation of the standard. In promulgating such a standard the Administrator is to determine the maximum degree of reduction which can be achieved by means reasonably expected to be available for production of such period. 42 U.S.C. **§7521(a)(2)(B)**. Revising the standard may only be undertaken if the Administrator finds (and such finding is not refuted by findings of the National Academy of Sciences) that

compliance with the emission standards otherwise applicable for such model year cannot be achieved by technology, processes, operating methods, or other alternatives reasonably expected to be available for production for such model year without increasing cost or decreasing fuel economy to an excessive and unreasonable degree . . . . 42 U.S.C. **§7571(a)(2)(c)** (emphasis added).

Finally, this section also provides for a report to the Congress concerning any revisions of a standard that addresses, among other things: (1) the cost-effectiveness of alternative strategies for attaining and maintaining the NAAQS in relationship to the cost-effectiveness of the original standards; and (2) findings as to the relative costs of compliance, and relative fuel economy, which may be expected to result from application for any model year of the revised standard. 42 U.S.C. **§7521(a)(2)(D)** (ii) (iv).

As with the CO, HC and  $\text{NO}_x$  standards for heavy duty vehicles, EPA may also take into account the cost of applying particulate matter (PM) standards within the time available to manufacturers. 42 U.S.C. **§7521(a)(3)(A)(iii)**. In contrast to application of the other standards, such standards must only take effect after model year 1981 “as expeditiously as practicable.” *Id.*

Section 202(b), 42 U.S.C. **§752(b)** pertains to regulations set for light duty vehicles and engines. Under one of its provisions, small manufacturers [i.e., less than 300,000 vehicles per year who are dependent on larger producers to develop technology) could be

granted relaxation of the  $\text{NO}_x$  standard for model years 1981 and 1982 if the Administrator determined that “such manufacturer lacks the financial resources and technical ability to develop the requisite technology to meet the standard.” 42 U.S.C. **§7521(b)(1)(13)(ii)**. In addition manufacturers could obtain waivers of the 1981-1982 CO standard if, among other things, they could show that the requisite technologies were:

not available or have not been available with respect to the model in question for a sufficient period of time to achieve compliance prior to the effective date of standards, taking into consideration costs, driveability, and fuel economy.... 42 U.S.C. **§7521(b)(5)(C)(iii)** (emphasis added).

In addition to the above exemptions, manufacturers of light vehicles may apply for innovative technology waivers for  $\text{NO}_x$  controls under Section 202(b)(6). The company must demonstrate, among other things, that the alternative technology will not endanger public health and that the waiver will result in “significant fuel savings at least equal to the fuel economy standards” applicable under the Energy Policy and Conservation Act. 42 U.S.C. **§7521(b)(6)(B)**.

In promulgating regulations applicable to high altitude vehicles or engines, EPA must “consider and make a finding with respect to

- (A) the economic impact upon consumers, individual high altitude dealers, and the automobile industry of any such regulation, including the economic impact which was experienced as a result of the regulation imposed during model year, 1977 with respect to high altitude certification requirements;
- (B) the present and future availability of emissions control technology capable of meeting the applicable vehicle and engine emission requirements without reducing model availability; and
- (C) the likelihood that the adoption of such a high altitude regulation will result in any significant improvement in air quality in any area to which it shall apply. 42 U.S.C. 7521(f)(3) (emphasis added).

The Administrator must also consider economic costs in designing and applying requirements for the recovery of gasoline vapor from the fueling of vehicles. In designing such systems, the Administrator must take into consideration a number of

technical factors and “such other factors as he deems pertinent.” 42 U.S.C. §7521(a)

(5)(A). In applying an effective date, the Act provides that such a regulation:

shall not become effective until the introduction of the model year for which it would be feasible to implement such standards, taking into consideration the restraints of an adequate leadtime for design and production. 42 U.S.C. §7521(5)(B). See also, 42 U.S.C. §7521(6).

Under Section 211, the Administrator regulates fuel and fuel additives that he determines are hazardous to the public health. 42 U.S.C. 56545. Pursuant to this authority, the Administrator may not prohibit the sale of any fuel or fuel additive except after:

consideration of all relevant . . . scientific evidence . . . , including consideration of other technological or economically feasible means of achieving emissions standards under section 202. 42 U.S.C. §7545(c)(2)(A).

Similarly fuels and fuel additives cannot be controlled or prohibited for impairing emissions control systems without:

consideration of available . . . economic data, including a cost-benefit analysis comparing emission control devices or systems which . . . require the proposed control or prohibition with emission control devices or systems which . . . do not require the proposed control or prohibition. 42 U.S.C. §7475(c)(2)(B).

In promulgating regulations concerning fuel or fuel additives, the Administrator may exempt any small business or modify the requirements with respect to small businesses. 42 U.S.C. §7475(e)(3)(A). He may also provide for cost sharing between auto manufacturers with respect to testing the fuel or fuel additive. 42 U.S.C. §7475(e)(3)(B).

Title II also provides for the regulation of aircraft emissions. Aircraft emissions standards, promulgated by the Agency, may only take effect after such period as is necessary for the development of the requisite technology, “giving appropriate consideration to the cost of compliance within such period.” 42 U.S.C. §7571(b).

(ii) Transportation Control Plans (TCPs)

The Administrator is authorized to make grants to “appropriate state agencies in an amount up to two-thirds of the cost of developing and maintaining effective vehicle inspection and maintenance programs and TCPs.” 42 U.S.C. §7544. However, there are no specific references to the consideration of economic costs in sections of the Act related to the states’ development of Transportation Control Plans (TCPs).

(iii) Inspection and Maintenance I/M Plans

As stated above, EPA may authorize grants to state agencies for up to two-thirds of its costs in developing an I/M program. 42 U.S.C. §7544. In addition, when maintenance of emissions controls in a light duty vehicle requires replacement of a part costing in excess of two percent of the vehicle’s value, replacement costs are to be borne by the vehicle manufacturer. 42 U.S.C. §7541(a)(3).

**b. Legislative History**

(i) Emissions Controls

The mobile source provisions were a major source of dispute in the 1977 amendments with much of the debate centering on the potential economic impact of the proposed auto emissions standards. Voicing his opposition to the HC, CO and **NO<sub>x</sub>** emissions standards proposed by the Carter administration, Senator Riegel stated:

It is critical that the auto emission question be evaluated in a broader context that includes energy, employment, health, and environmental concerns. . . .

The economy of every state in the country is to some degree affected by the auto industry. . . .

We must, therefore, focus, on reaching the right tradeoff between further pollution controls and what they will cost the economy, the consumer, and our national energy supply. None of these economic considerations was addressed by the administration in proposing its emission standards. I believe

that the administration's auto emission proposal will not achieve this critically needed tradeoff, and will instead cost the economy more in terms of energy and jobs than is necessary and than it can afford. The public health and the ambient air quality can be protected without the strict controls advocated by the administration, and the energy and economic savings will be significant. Senate Debate on S. 252 June 10, 1977, 95th Cong., 1st Session at 3 L.H. 1223-4, (1977).

Senator Muskie, however, advocated a minimal role for economic considerations in the 1977 Amendments for auto emissions standards which he believed should be dictated by health standards. In the Senate Report of S. 252 he stated:

Stringent auto emissions standards were established because public health protection required it. Automobiles continue to be the most pervasive source of pollution in the country. As indicated above, the alternative may be severe limits on growth in many of this country's major metropolitan areas: a limitation neither local nor national economies can afford. Stringent standards are feasible and healthy air quality cannot be achieved without such controls. Senate Rep. 95-127, 95th Cong., 1st Sess at 3 L.H. 1381 (1977).

Ultimately, the auto emission standards that were set reflect a compromise between the two factions. They provide latitude for economic considerations while maintaining the commitment to public health. The allowances are in the form of waivers and lead-time for the automobile industry. In presenting the committee compromise on H.R. 6161, Congressman Rogers outlined the scope of the bill. He stated:

It is our understanding that several criteria had to be met before the President proposed his plan for controlling automobile pollution. They include:

First, arriving at standards which would protect the public's health;

Second, insuring that the automobile emissions schedule would not conflict with our goal of increasing automobile fuel economy as mandated by the Congress;

Third, insuring that the cost of such a program would be reasonable; and

Fourth, providing the manufacturers of automobiles with stability and enough lead time so as to not disrupt one of the nation's largest industries or to cause unemployment.

The President Carter-committee proposal, therefore properly balances protection of public health, economic and technical feasibility, and industry lead-time requirements, while assuring the nation's 1980 and 1985 new car fuel economy goals will be met.

A waiver for the CO was made available under limited conditions, including economic feasibility as the Senate consideration of the conference report on H.R. 6161 indicates. In it Senator Muskie reported:

The 1981 carbon monoxide standard may be waived for any model line of vehicles in 1981 or 1982 if the Administrator makes several specific findings; that public health does not require attainment of the statutory standard; that the waiver is essential to the public interest; that all good faith efforts have been made to meet the statutory standard; that control technology to meet the statutory standard will not be available, taking into account cost, driveability and fuel economy; and the study by the National Academy of Science does not disagree with his finding on availability of technology. Senate consideration of the Report of the Conf. Comm. on H.R. 6161, August 4, 1977, 95th Cong., 1st Sess. at 3 L.H. 3039, (1977) (emphasis added).

The  $\text{NO}_x$  waiver for the development of innovative control technology was intended to provide economic incentives to the automobile industry to develop innovative control technology that would, in the long run, protect the public health. As Senator Muskie pointed out:

. . . in order to assure that the waiver will be targeted towards long term air quality benefits, the waivers may only be granted if there is a substantial likelihood that the engines will be able to comply at the end of the waiver period with the statutory emission standards. Thus the waiver is not intended to provide a loophole in the statutory standards, but only to provide an opportunity for technology developments which may lead to greatly improved emissions performance in the next decade. Id. at 3 L-H., (1977).

Section 202 provides an interim compliance schedule for small automobile manufacturers because of their dependence on the larger companies for development of control technology. Congress recognized the economic hardship that would be imposed on American Motors Corp., which would need time to adapt new control technology to their automobile models. They did not, however, intend that this exemption would

compromise the health-related goals of the Act, as the legislative history indicates. Senator Nelson, who introduced the amendment for small manufacturers, which was included in the Senate bill, stated:

It is important to note that this approach endorses two fundamental principles of the committee's bill: One, that the standards of .41/3.4/1 are necessary to protect public health; and, two, that American Motors requires more time to comply with these emission standards. Senate Debate on S.252, June 9, 1977, 95th Cong., 1st Sess. at 3 L.H. 855, (1977).

## **2. Fuel Additives**

Statements made by Senator Muskie before the Senate during its consideration of the conference committee report described the balance the Administrator must strike in determining the need to regulate or prohibit fuel additives. He stated:

It is not the intent of the Congress to create a cumbersome, time consuming administrative procedure which will delay necessary controls on fuels and fuel additives required to meet these deadlines.

Neither is it the intention of the Congress to lock the Administrator into a rigid economic, interpretation of the cost benefit analysis specified in this section in making his determination to prohibit or control fuels or fuel additives.

Rather, the conference committee wishes to call the attention of the Administrator to the broad environmental, esthetic and health considerations underlying the enactment, of this legislation which should be kept in mind in making these determinations. Senate consideration of Conference Report, December 18, 1970 at 1 L-H. 135, (1974).

## **3. Transportation Controls**

Congress recognized the need for a balance between economic and health concerns in the implementation of transportation control plans. The Senate debate on S.252 revealed that:

Adjusting the Clean Air Act to provide a more acceptable plan of implementing transportation controls was frustrating. The committee recognized that relaxation of deadlines would cause millions of people to be exposed to unhealthy levels of air

pollution. Yet, to continue with the present deadlines could create equally unacceptable adverse public health and welfare implications.

The committee action is a compromise assuring that reasonableness will guide transportation control strategies. Senate Debate on S.252, June 8, 1977, 95th Cong., 1st Sess. at 3 L.H. 720, 91977).

They went on to clarify the intent of the term “reasonable.”

The definition of what is a reasonable measure will relate to the adverse social and economic impact that would occur through its use. Ibid.

#### **4. I/M Plans**

There is no relevant legislative history on I/M plans.

##### **c. Case Law**

###### **(i) Emission Controls**

Four cases are particularly relevant to an assessment of the role of economics under Title II. International Harvester v. Ruckelshaus 478 F.2d 615 (D.C. Cir. 1973) has greatly influenced the decisionmaking of EPA in these matters. In that case, the D.C. Circuit interpreted the extent to which the Administrator must assess economic costs in predicting the future availability of catalytic converters for eight vehicles. The court ruled that in suspending emission control standards, EPA must balance the environmental costs of a suspension against the economic and ecological costs if the Administrator’s prediction of the availability of effective technology is incorrect. These include “the theoretical possibility of industry shutdown,” “lessened car performance,” and “adverse environmental risks.” Id. at 636-638. [Note, the Court did not suspend the standards.]

On the issue of determining feasibility sufficient to meet basic auto demand, the court agreed that EPA rightly considered:

that as long as feasible technology permits the demand for new passenger automobiles to be generally met, the basic requirements of the Act would be satisfied even though this

might occasion fewer models and a more limited choice of engine types. The driving preferences of hot rodders are not to outweigh the goal of a clean environment. Id. at 640.

The panel, however, remanded the ruling to the Agency stating, that among other things, the Administrator must explain how he estimated “basic demand” and “how his definition conforms to the statutory directive.” Id. Chief Judge Bazelon wrote for the court:

A significant decrease in auto production will have a major economic impact on labor and suppliers to the companies. We have no reason to believe that “effective technology” did not comport within its meaning sufficient technology to meet a basic level of consumer demand. Id. at 640-641.

Finally, the court held that the International Harvester case required the court and the Administrator to balance “the costs of a ‘wrong decision’ on feasibility against the gains of a correct decision. In the court’s opinion, Chief Judge Bazelon wrote:

These costs include the risks of grave maladjustments for the technological leader from the eleventh-hour grant of a suspension, and the impact on jobs and the economy from a decision which is only partially accurate, allowing companies to produce cars but at a significantly reduced level of output. Against this must be weighed the environmental savings from denial of suspension. The record indicates that these will be relatively modest. There is also the possibility that failure to grant a suspension may be counter-productive to the environment, if there is significant decline in performance characteristics. Id. at 641.

In Amoco Oil Col. v. EPA, 501 F.2d 722 (D.C. Cir. 1974), the D.C. Circuit validated EPA’s regulations prohibiting use of leaded gas in cars equipped with catalytic converters. The judges read Section 211(c)(2)(B) of the Act, regarding the basis for the Administrator’s decisions to regulate fuels, not to require overly-detailed findings regarding risks and other technical and economic factors.

Both Motor and Equipment Manufacturers Assoc., Inc. v. EPA, 627 F.2d 1095 (D.C. Cir, cert. den’d, 466 U.S. 952 91979), and NRDC v. EPA, 655 F.2d 318 (D.C. Cir.), cert. den’d, 454 U.S. 1017 (1981) involved judicial interpretations of the term “cost of compliance” under Section 202. In the first case the court held that “cost of compliance”

encompasses economic costs of pollution, not social costs of pollution control per se. It held:

Section 202's cost compliance" concern, juxtaposed as it is with the requirement that the Administrator provide the requisite lead time to allow technological development, refers to economic costs of motor vehicle emissions standards and accompanying procedures . . . Congress wanted to avoid undue disruption in the automotive manufacturing industry and also sought to avoid doubling or tripling the cost of motor vehicles to purchasers. It therefore requires that emission regulations be technologically feasible within economic parameters. Id. at 1118.

In the Motor and Equipment Manufacturer's case, the court found petitioner's claims that EPA had a duty to consider the anticompetitiveness effects of the regulation inapposite. Id.

NRDC v. EPA, supra, decided by the D.C. Circuit in 1981, concerned the Agency's issuance of standards for particulates from diesel engines. The auto industry attacked the rulemaking on the basis that the Administrator's deadline for compliance with the standard was not reasonable. NRDC argued, on the other hand, that the standards were too lax and that emission standards should be tightened until the cost of compliance by diesels equaled or exceeded the cost of compliance by gasoline vehicles. The court held that the statute did not contemplate balancing of the competitive advantage of different motor types in setting a standard.

(ii) Transportation Control Plans

No case law is relevant concerning this issue.

(iii) I/M Program

In considering a grant of a waiver of preemption for California's in-use maintenance regulations, Motor and Equipment Manufacturers Ass'n. v. EPA held that EPA's Administrator was not obligated to conduct a cost-effectiveness study of the federal regulations as part of the examination of the cost of compliance. 627 F.2d at 1114 (D.C. Cir. 1979).

**8. Enforcement**

**a. Statutory Directives**

EPA's arsenal of enforcement weapons under the Clean Air Act include administrative compliance orders and noncompliance penalties, civil penalties, criminal sanctions and the authority to preclude violators of the Act from receiving federal contracts and grants. The Act provides a measure of prosecutorial discretion in imposing such sanctions. In addition, the Act's two-pronged enforcement approach giving states primary enforcement capability and the federal government independent authority to seek redress or prosecution of sources is an important aspect of the enforcement program.

Many enforcement provisions are sensitive to economic concerns. These include sections concerning:

- o Delayed Compliance Orders and Attainment Deadline Extensions. §§113, 119, 42 U.S.C. 857413, 7419,
- o Civil Penalty Assessments and Procedures. CAA §113(b), 42 U.S.C. §7413(b),
- o Noncompliance Penalty Provisions; CAA § 120, 42 U.S.C. §7470, and
- o Special enforcement provisions pertaining to violations of mobile source control and fuel standards. CAA §§202, 211(c); 42 U.S.C. 397521, 7545(c).

In addition, EPA was directed by Congress in the 1977 amendments to study the economic impact of compliance on industry, the costs of enforcement and the use of economic incentives in encouraging pollution control.

(i) Delayed Compliance Order and Attainment Deadline Extensions

Pursuant to Section 113(a), 42 U.S.C. §7413(a), the Administrator may issue a compliance order. Such an order shall:

specify the nature of the violation (and) specify a time for compliance which the Administrator determines is reasonable, taking into account the seriousness of the violation and any good faith efforts to comply with applicable requirements. 42 U.S.C. §7413(a)(4) (emphasis added).

Subsection (d) allowed the Administrator to issue delayed compliance orders (DCOs) with final deadlines up to July 1, 1979 or within specified numbers of months of the applicability of compliance requirements. Most DCO's are no longer available. DCO's were granted to "any stationary source which is unable to comply with any requirement of an applicable implementation plan . . . ." 42 U.S.C. §7413(d)(1) (emphasis added). DCOs were also authorized for sources planning to comply by means of replacement of plant facilities, complete process changes or shutdowns without any interim compliance schedule effective until July 1, 1979. 42 U.S.C. §7413(d)(3). As a condition of the issuance of such an order, "the owner or operator of such source shall post a bond or other surety in an amount equal to the cost of actual compliance by such facility and any economic value which may accrue to the owner or operator of such source by reason of the failure to comply." Id.

Arguably, two types of DCO's are still available. Section 113(d)(4) provides for compliance deadline extensions of up to five years for sources demonstrating a "new means of emission limitation." 42 U.S.C. §7415(d)(4). The Administrator may grant such a delayed compliance order if he determines, among other things, that any such means of emission control has a "substantial likelihood" of "achieving an equivalent continuous

reduction at lower costs in terms of energy, economic or nonair environmental impact...,” Id. In addition, section 113(d)(5) provides for DCO’s for sources converting to coal pursuant to the President’s national energy plan. 42 U.S.C. ~~§7413(d)(5)~~. While (d)(4) and (5) DCO’s might be issued, it is not clear that the Act authorizes compliance deadline extensions past the attainment deadline.

Special compliance “extensions” from attainment deadlines for particular source categories were included in the Act by 1977 and 1921 amendments because of industry claims that economic hardship and disruption had resulted from installation of pollution controls. Section 119, authorizes DCOs for primary nonferrous smelters that; among other things, are unable to comply with SIP requirements for RACT because the technology had not been “adequately demonstrated (as determined by the Administrator, taking into account the cost of compliance, nonair quality health and environmental impact, and energy consideration).” 42 U.S.C. ~~§7419~~. In addition, the 1981 Steel Compliance Extension Act, P.L. 97-23 (1981), set forth at section 113(e), authorized the Administrator to grant owners and operators of stationary sources in iron and steel-producing operations extensions up to December 31, 1982 if he found among other things that: (1) such an extension was necessary to allow the such person to make capital investments to improve efficiency and productivity of the operations; (2) such funds equal to the cost of compliance are invested accordingly; and (3) such person consents to a “phased-in” compliance program to meet SIP requirements “as expeditiously as practicable” but no later than December 31, 1982. 42 U.S.C. ~~§§7413(e)(h)(A),(B),(C)~~.

(ii) Civil Penalties

The Clean Air Act was amended in 1977 to add two types of civil penalties to the Act’s enforcement arsenal. Section 113(b) authorizes actions for injunctive relief and civil penalties of up to \$25,000 per day of violation. Section 120 authorizes EPA to impose administratively noncompliance penalties on sources failing to comply with the

Act's requirements by July 1, 1979 (or any later applicable compliance date). The noncompliance penalties are to be calculated so as to equal the economic benefit of delayed compliance.

Such penalty provisions raise two types of economic issues. First, may the agency decline to impose penalties in order to avoid economic harm to a violator? Second, may the penalties be used to redress an imbalance in the economic incentives for compliance?

The language of the Act suggests that EPA has little discretion in deciding whether to levy a penalty. Section 113(b) states that:

The Administrator shall in the case of any person which is the owner or operator of a major stationary source, and may, in the case of any other person, commence a civil action for a permanent or temporary injunction, or to assess and recover a civil penalty of not more than \$25,000 per day of violation, or both, whenever such person--

(1) violates or fails or refuses to comply with any order issued under subsection (a); or

(2) violates any requirement of an applicable implementation plan...; or [violates other requirements of the Act]. [Emphasis added.]

Section 120(a)(2)(A) states:

Except as provided in subparagraph (B) or (C) of this paragraph, the State or the Administrator shall assess and collect a non-compliance penalty against every person who owns or operates-

(i) a major stationary source...which is not in compliance with any emission limitation, emission standard or compliance schedule under any applicable implementation plan (whether or not such source is subject to a Federal or State consent decree), or [sources in violation of other provisions of the Act].

While section 113 provides virtually no guidance on setting the penalty amount, section 120 expressly directs EPA to base the penalty on economic variables. Section 120(d)(2) states:

The amount of penalty which shall be assessed and collected with respect to any source under this section shall be equal to

(A) the amount determined in accordance with regulation promulgated by the Administrator under subsection (a) which is no less than the economic value which a delay in compliance beyond July 1, 1979, may have for the owner or operator. . . , minus

(B) the amount of any expenditure made by the owner or operator of that source during any such quarter for the purpose of bringing that source into, and maintaining compliance with, such requirement, . . . .

The statute spells out limited exemptions, none of which are based on economic hardship.

(iii) Criminal Sanctions

In contrast with the civil provisions in subsection (b), the statute does not direct the court to consider economic impacts of criminal penalties on violators. Section 113 includes criminal penalties of up to \$25,000 each day and up to 1 year for “knowing” violations of the Act and up to \$10,000 and up to six months of imprisonment for persons who “knowingly” make false statements or representations or who tamper with monitoring or recording requirements. 42 U.S.C. §7413(c).

(iv) Mobile Source Enforcement Program

Section 205 of Title II provides for automatic penalties for violation of provisions pertaining to manufacturers’ responsibilities for emissions controls. 42 U.S.C. 57524. In contrast, section 211(d) allows the Administrator to consider economic factors. 42 U.S.C. §7522(d). After assessments of penalties for violation of regulations prohibiting the sale of particular fuels or fuel additives, and “upon application therefore, (the Administrator may) remit or mitigate any forfeiture provided for in this subsection and he shall have authority to determine the facts upon all such applications.”

EPA’s civil penalty policy under section 211(d) is codified at 40 C.F.R. part 80, Subpart D. It states:

- (1) In evaluating the appropriateness of such proposed penalty, the Regional Administrator must consider (i) the gravity of the violation, (ii) the size of respondent's business, (iii) respondent's history of compliance with the Act, (iv) the action taken by respondent to remedy the specific violation, and (v) the effect of such proposed penalty on respondent's ability to continue in business.
- (2) In determining the appropriate penalty to be assessed, the Regional Administrator may consult and rely upon the Guidelines for the Assessment of Civil Penalties, published as a Notice in the Federal Register of August 29, 1975, as part of the Part II. The Regional Administrator may, at his discretion, increase or decrease the assessed penalty from the amount recommended to be assessed in the initial decision, or in the Guidelines for the Assessment of Civil Penalties.

(v) Enforcement Studies

Section 405, added by the 1977 amendments, directs EPA, in conjunction with the Council of Economic Advisers, to study and assess economic measures for the control of air pollution. Such studies "shall concentrate on where existing methods of controls were not effective because economic incentives delayed compliance and the formulation of economic measures that would provide incentives for control without interfacing with existing methods. 42 U.S.C. §405(b).

**b. Legislative History**

The legislative history of the 1977 amendments reflects Congressional dissatisfaction with the 1970 Act's enforcement program, and particularly their effect of making it economically beneficial for polluters to pay civil penalties in lieu of implementing costly control technologies at plants. In the 1977 amendments, Congress sought to stiffen enforcement provisions and clearly delimit exemptions to their application.