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Economic Impact Studies and Negative Declarations by the Illinois Department of Energy and Natural Resources in Rulemaking Proceedings before the Illinois Pollution Control Board

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ECONOMIC IMPACT STUDIES AND NEGATIVE
DECLARATIONS BY THE ILLINOIS DEPARTMENT
OF ENERGY AND NATURAL RESOURCES
IN RULEMAKING PROCEEDINGS BEFORE
THE ILLINOIS POLLUTION CONTROL BOARD

MICHAEL P. HURST*

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INTRODUCTION

Economic impact studies were introduced into Illinois environmen-

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tal law in 1975. The 1975 amendments which created the mandate for the studies was viewed as a step forward for neoclassical economic theory in environmental law. In reality the production of the studies has contributed little to the quality of environmental regulation in Illinois. Indeed, in recent years the quality of benefit assessment has actually declined. Furthermore the courts are beginning to apply the 1975 amendments in a fashion that is likely to generate chaos in the administration of environmental regulations in the next few years. This situation can be reversed if the Department of Energy and Natural Resources ("Department") takes a more aggressive role in developing the state of the art for benefits assessment and utilizes its discretionary negative declaration more often.

THE USE OF ECONOMIC IMPACT STUDIES IN ENVIRONMENTAL REGULATION IN ILLINOIS

The Illinois legislature has amended the Illinois Environmental Protection Act¹ ("IEPA") in a manner that reflects the development of the debate concerning the economic theory that should guide Illinois environmental protection policies. One theory would place all costs of controlling pollution on the source; the contending theory would assign the costs where the highest benefit to cost ratio would be achieved regardless of whether the assignee is the source of the pollution. The latter theory is closely associated with "conservative economists" and often seen as an attempt to place restraints on government environmental activism. The implementation of that theory through amendments of the IEPA has not, however, produce the strict restraints many envisaged would result. In fact, the theory is floundering under the weight of its own administrative burden. Before coming back to this point it is necessary to outline the historical development of the IEPA and the economic theories that underlie the various sections of the IEPA.

A Brief History and the Conflict of Economic Theories in Illinois Environmental Law

Initially, in 1970, the IEPA did not have any specific reference to "economic impact" or "cost benefit" studies. The legislature's findings state that the purpose of the IEPA is, in part, to "assure that adverse effects upon the environment are fully considered and borne by those

1. ENVIRONMENTAL PROTECTION ACT, ILL. REV. STAT. ch. 111 1/2, para. 1000 *et seq.* (1985); hereinafter referred to as the IEPA.

who cause them.”² Underlying that initial language of the IEPA is the economic theory that the social cost of pollution should be borne by the private polluter, thus equating the social cost and the private cost. In 1975, however, the IEPA was amended to include an explicit requirement that rulemaking proceedings before the Illinois Pollution Control Board (“Board”) include evidence on the economic impact of a proposed regulation. These 1975 amendments represent the onslaught of the economic theory that some pollution may be necessary for economic progress and that society is better off with pollution if the cost of eliminating the pollution is greater than the benefit that would be gained from the activity which generates the pollution.

The basic requirement introduced by the 1975 amendments is found

2. ENVIRONMENTAL PROTECTION ACT § 2, ILL. REV. STAT. ch. 111 1/2, para. 1002 (1985).

The full text of § 2 reads as follows:

- (a) The General Assembly finds:
 - (i) that environmental damage seriously endangers the public health and welfare, as more specifically described in later sections of this Act;
 - (ii) that because environmental damage does not respect political boundaries, it is necessary to establish a unified state-wide program for environmental protection and to cooperate fully with other States and with the United States in protecting the environment;
 - (iii) that air, water, and other resource pollution, public water supply, solid waste disposal, noise, and other environmental problems are closely interrelated and must be dealt with as a unified whole in order to safeguard the environment;
 - (iv) that it is the obligation of the State government to manage its own activities so as to minimize environmental damage; to encourage and assist local governments to adopt and implement environmental protection programs consistent with this Act; to promote the development of technology for environmental protection and conservation of natural resources; and in appropriate cases to afford financial assistance in preventing environmental damage;
 - (v) that in order to alleviate the burden on enforcement agencies, to assure that all interests are given a full hearing, and to increase public participation in the task of protecting the environment, private as well as governmental remedies must be provided;
 - (vi) that despite the existing laws and regulations concerning environmental damage there exist continuing destruction and damage to the environment and harm to the public health, safety and welfare of the people of this State, and that among the most significant sources of this destruction, damage, and harm are the improper and unsafe transportation, treatment, storage, disposal, and dumping of hazardous wastes;
 - (vii) that it is necessary to supplement and strengthen existing criminal sanctions regarding environmental damage, by enacting specific penalties for injury to public health and welfare and the environment.
- (b) It is the purpose of this Act, as more specifically described in later sections, to establish a unified, state-wide program supplemented by private remedies, to restore, protect and enhance the quality of the environment, and to assure that adverse effects upon the environment are fully considered and borne by those who cause them.
- (c) The terms and provisions of this Act shall be liberally construed so as to effectuate the purpose of this Act as set forth in subsection (b) of this Section, but to the extent that this Act prescribes criminal penalties, it shall be construed in accordance with the “Criminal Code of 1961,” as amended.

in § 27 of the IEPA³ which requires that the Board conduct hearings on the economic impact of any proposed regulation or amendment to ex-

3. ENVIRONMENTAL PROTECTION ACT § 27, ILL. REV. STAT. ch. 111 1/2, para. 1027 (1985). The full text of § 27 reads as follows:

- (a) The board may adopt substantive regulations as described in Sections 10, 13, 17, 22, 22.4 and 25 of this Act. Any such regulations may make different provisions as required by circumstances for different contaminant sources and for different geographical areas; may apply to sources outside this State causing, contributing to, or threatening environmental damage in Illinois; and may make special provision for alert and abatement standards and procedures respecting occurrences or emergencies of pollution or on other short-term conditions constituting an acute danger to health or to the environment in promulgating regulations under this Act, the Board shall take into account the existing physical conditions, the character of the area involved, including the character of surrounding land uses, zoning classifications, the nature of the existing air quality, or receiving body of water, as the case may be, and the technical feasibility and economic reasonableness of measuring or reducing the particular type of pollutions. The generality of this grant of authority shall only be limited by the specifications of particular classes of regulations elsewhere in this Act.

No charge shall be established or assessed by the Board or Agency against any person for emission of air contaminants from any source, for discharge of water contaminants from any source, or for the sale, offer, or use of any article.

- (b) Except as provided below, before the adoption of any proposed regulations, or amendment to existing regulations, the Board shall conduct hearings on the economic impact of those new regulations, and shall receive comments from the public regarding the study of the economic impact of those proposals prepared by the Department as provided in subsection (c) of Section 4 of "An Act in relation to natural resources, research, data collection and environmental studies," approved July 14, 1978, as amended. In adopting any such new regulation, the Board shall, in its written opinion, make a determination, based upon the Department's study and other evidence in the public hearing record, as to whether the proposed regulation has any adverse economic impact on the People of the State of Illinois.

Notwithstanding subsection (c) of Section 4 of "An Act in relation to natural resources, research, data collection and environmental studies," approved July 1, 1978 as amended, the Board may modify and subsequently adopt any proposed regulations, or amendments to existing regulations without any additional economic study by the Department pursuant to subsection (c) of section 4 of "An act in relation to natural resources, research, data collection and environmental studies," approved July 14, 1978, as amended, provided that, such modification by the Board does not significantly alter the intent and purpose of the proposed regulation which was the subject of the Department's study.

The Board may adopt a proposed regulation prior to its consideration of an economic impact study when such study is filed with the Board less than 120 days in advance of a date on which a temporary non-emergency regulation or provision thereof would lapse prior to adoption of a permanent regulation or provision thereof on the same subject, or less than 120 days in advance of a deadline for adoption of the regulation which is established in a state statute.

Such adopted regulation shall be effective until 180 days after the economic impact study required pursuant to this Section is filed with the Board, and in no event shall a regulation adopted pursuant to this procedure stay in effect for more than one year.

- (c) On proclamation by the Governor, pursuant to Section 8 of the "Illinois Emergency Services and Disaster Act of 1975," that a disaster emergency exists, or when the Board finds that a severe public health emergency exists, the Board may, in relation to any proposed regulation, order that such regulation shall take effect without delay and the Board shall proceed with the hearings and studies required by this Section while the regulation continues in effect.

When the Board finds that a situation exists which reasonably constitutes a threat to the public interest, safety or welfare, the Board may adopt regulations pursuant to and in accordance with Section 5.02 of the Illinois Administrative Procedure Act.

isting regulations.⁴ That same section, § 27(b), requires the Board accept comments on and consider those elements detailed in the economic impact study completed pursuant to § 4(c) of "An Act in relation to natural resources, research, data collection and environmental studies."⁵ It is

4. *Id.* § 27(b).

5. AN ACT IN RELATION TO NATURAL RESOURCES, RESEARCH, DATA COLLECTION AND ENVIRONMENTAL STUDIES § 4, ILL. REV. STAT. ch. 96 1/2, para. 7404 (1985). Hereinafter referred to as "AN ACT IN RELATION TO NATURAL RESOURCES." The full text of that section reads as follows:

Economic Impact Studies.

- (a) The Department shall prepare and publish a comprehensive study of the economic impact of the existing rules and regulations of the Pollution Control Board, in accordance with the criteria established in this subsection. Each economic impact study shall include, but not be limited to the following:
- (1) An evaluation of the environmental costs, and benefits of the rules and regulations to the people of the State of Illinois, including the health, welfare and social costs and benefits.
 - (2) An evaluation of the economic impact of the rules and regulations on the people of the State of Illinois, including but not limited to the effect of said rules and regulations on the following:
 - (A) cost of goods, and services,
 - (B) availability of goods, and services,
 - (C) availability of employment.
 - (3) An evaluation of the economic impact of the rules and regulations on Illinois agriculture, including but not limited to the following:
 - (A) cost of food,
 - (B) availability of food, and
 - (C) availability of employment.
 - (4) An evaluation of the economic impact of the rules and regulations on units of local government, including but not limited to the following:
 - (A) effect on local taxes,
 - (B) effect on local services, and
 - (C) effect on local community expansion.
 - (5) An evaluation of the economic impact of the rules and regulation on commerce and industry, including but not limited to the following:
 - (A) effect on prices,
 - (B) effect on expansion of industry in Illinois,
 - (C) effect on the availability of adequate supplies of energy, and
 - (D) effect on the attraction of new industry.

The economic impact studies shall be completed by the Department with the guidance and counsel of the Economic Technical Advisory Committee. The Advisory Committee shall propose, for the economic study provided for in this amendatory Act, such rules and regulations of the Pollution Control Board in effect on July 14, 1978 as the Committee has reasonable cause to believe may, as applied, have an adverse economic impact, based on standards set forth in this subsection. The Director of the Department shall select, from among those rules and regulations proposed for study by the Committee, those for which he determines the study is most necessary and appropriate, in consideration of the Department's budgetary constraints. Upon completion of the economic impact studies, the Department shall publish its findings and conclusions with the supporting data used to reach said findings and conclusions, and the Department shall file said economic studies with the Board.

To allow for adequate public exposure and response, each study shall be made available to the public at least 30 days prior to the Department's formal presentation to the Board. Existing rules and regulations proposed by the Economic Technical Advisory Committee for economic impact studies and selected by the Director will remain in full force and effect during the preparation and review of said studies unless modified by an order of the Pollution Control Board.

- (b) Within a reasonable time but not longer than 120 days after each economic study has

this § 4(c) that has a checkered history which requires some explanation before further discussion.

been filed with the Board, as provided herein, the Pollution Control Board shall conduct public hearings throughout the State to receive comments from the public regarding the study. The hearings shall be conducted as provided in Sections 26, 27, 28, 29 of the Environmental Protection Act. Upon conclusion of the hearings, the Pollution Control Board shall publish its findings and conclusions on the areas covered by the study and the testimony received by the Pollution Control Board. The Board shall also specifically determine whether, as a result of their findings and conclusions, any regulations of the Pollution Control Board shall be modified or eliminated. If the Pollution Control Board concludes that modification or elimination may be necessary, it shall propose such modifications and conduct further hearings on said modifications as provided in Section 28 of The Environmental Protection Act. Any such proposed modification shall not require any additional economic study by the Department pursuant to this Act.

- (c) In addition, the Department shall, with the guidance and counsel of the Economic Technical Advisory committee, prepare an economic impact study for all proposed regulations, for which hearings are required and authorized by the Pollution Control Board except as otherwise determined pursuant to subsection (d) of this Section. This study shall include, but not be limited to, those factors set forth in subsection (a). The Department shall file this study with the Board prior to the adoption of any new regulations and the Board shall conduct hearings on this study as provided in the Environmental Protection Act.
- (d) Within 30 days after the Board notifies the Director of the Department of its decision to accept a regulatory proposal for hearings, the Director may deliver to the Board and the Advisory Committee written notification of his determination that an economic impact study is not necessary, specifying the reasons for his determination. This provision shall not apply if the regulatory proposal includes a written request that an economic impact study be prepared. The Director may make a finding that an economic impact study is unnecessary in any of the following situations:
- (1) The regulation has no economic impact;
 - (2) The net economic impact of the regulation is favorable and the costs of compliance are small or are borne entirely by the proponent of the regulation;
 - (3) The economic impact of the regulation is so difficult to measure that a formal study would not generate useful information; or
 - (4) The cost of making a formal study is economically unreasonable in relation to the value of the study to the Board in determining the adverse economic impact of the regulation.

The Advisory Committee shall meet and vote on the matter within 45 days after the receipt of written notification of the Director's determination. Proxy votes may be accepted pursuant to procedures established by the Advisory Committee. If a majority of the Advisory Committee votes in favor of an economic impact study, the study shall be required notwithstanding the Director's determination. If the Advisory Committee fails to notify the Director and the Board of its opposition within 45 days after the receipt of written notification of the Director's determination, it shall be deemed to have accepted the Director's determination. The Board shall give written notice of the Director's finding that an economic impact study is not necessary by publication in the "Environmental Register" or other appropriate publication. Notwithstanding the above, the Department shall prepare an economic impact study upon a finding of the Board based upon substantial evidence presented at the hearing required by Section 28 of the Environmental Protection Act that an economic impact study is necessary to its determination.

- (e) The Department shall study the economic impact of selected existing and proposed environmental control regulations on a continuous basis. The Department shall report to the Pollution Control Board and the General Assembly on the Economic impact of selected existing and proposed regulations annually. The requirement for reporting to the General Assembly shall be satisfied by filing copies of the report with the Speaker, the Minority Leader and the clerk of the House of Representatives and the President, the Minority Leader and the Secretary of the

Section 4(c) of An Act in Relation To Natural Resources was originally § 6 of the IEPA.⁶ The original § 6 in the 1970 IEPA did not require any economic impact study.⁷ Section 6 was amended in 1975 to establish the Illinois Institute for Environmental Quality and the Economic Technical Advisory Committee. Together these new agencies were to study the economic impact of existing environmental regulations as well as prepare "an economic impact study for all proposed regulations, for which hearings are required and authorized by the Board."⁸ Section 6(b) provided the guidelines for the elements that must be included in an economic impact study. Section 6 of the IEPA was repealed on July 1, 1978, by An Act in Relation To Natural Resources.⁹ That act also created the Illinois Institute of Natural Resources. The responsibilities of the defunct Institute of Environmental Quality concerning economic impact studies were conferred on the Illinois Institute of Natural Resources.¹⁰ The Economic Technical Advisory Committee was reestablished by § 5 of An Act in Relation To Natural Resources.

In 1981 the Illinois Institute of Natural Resources was renamed the Illinois Department of Energy and Natural Resources¹¹ and § 4(d) was added to "An Act In Relation To Natural Resources."¹² Section 4(d) gave the Department the power to make a finding that an economic impact study is not necessary under certain limited circumstances.

Thus, the central requirements for economic impact studies in rulemaking proceedings before the Board did not exist in the initial 1970 IEPA. These requirements were added in the 1975 amendments which created the Illinois Institute of Environmental Quality. These requirements became the duty of the Department with the 1978 amendments to the IEPA. The Department's responsibilities have been broadened to in-

Senate and the Legislative Council, as required by Section 3.1 of "An Act to revise the law in relation to the General Assembly," approved February 25, 1874, as amended and filing such additional copies with the State Government Report Distribution Center for the General Assembly as is required under paragraph (t) of Section 7 of the State Library Act.

- (f) The Department shall cause to be prepared on an annual basis a review of the "state of the art" environmental benefits assessment. The data and techniques contained in this report shall be included to the extent possible in the economic impact studies prepared pursuant to this Section.

6. ENVIRONMENTAL PROTECTION ACT § 6, ILL. REV. STAT. ch. 111 1/2 par. 1006 (1976) (repealed by P.A. 80-1218 § 19, June 1, 1978).

7. *Id.*

8. *Id.* § 6(d).

9. P.A. 80-1218, § 19, July 1, 1978.

10. *Id.*

11. P.A. 82-548, § 1, Sept. 16, 1981.

12. P.A. 82-592, § 8, Sept. 24, 1981.

clude limited authority to deny the need for an economic impact study in the 1981 amendments to the IEPA.

Yet, in the process of these amendments the initial language of § 2(b) of the IEPA was not changed. A conflict remains between the economic theory that underlies the language of § 2(b) and the requirements of § 27(b) of the IEPA. In brief, it is not possible to always "assure that the adverse effects upon the environment are fully considered and borne by those who cause them"¹³ as required by § 2(b) and also pick the alternative which yields the highest benefit to cost ratio implicit in the requirements of § 27(b). In some instances the alternative with the highest benefit to cost ratio will assign significant pollution cost on the general public and not on the source of the pollution. This conflict is a reflection of the debate over what method should be utilized in attempts to prevent environmental harm. In short, should polluters pay the full cost of preventing or compensating for pollution damage or do the requirements of economic progress dictate that some level of pollution be tolerated?

The Economic Theory of Economic Impact Analysis

The economic theory underlying the argument that the polluter should bear all the costs imposed on society by its pollution is subsumed in the more general theory that the action which results in the highest benefit to cost ratio should be selected. Fundamental to the latter approach is the economic impact study. An economic impact study is a quantitative analysis comparing the "costs" and the "benefits" of various alternative methods for accomplishing a particular goal. At the theoretical foundation for such a comparison are the concepts of "consumer surplus," the welfare principle of Pareto optimality, and the existence of market externalities. Essentially the rule is that the optimal decision is one that makes no one worse off and someone better off, thus an optimal state is one in which no one can be made better off without making someone worse off. The argument is that, since the market fails to achieve the optimal state when "externalities"¹⁴ such as pollution are generated, then a cost-benefit analysis will guide decisionmakers toward an optimal choice among extra-market alternatives.

13. IEPA § 2(b).

14. J. HENDERSON & R. QUANDT, MICROECONOMIC THEORY A MATHEMATICAL APPROACH (2d ed. 1971) at 272. Hereinafter referred to as "HENDERSON AND QUANDT." An externality exists when the opportunity cost is not the same from the private and social points of view. In other words, when the market price does not reflect the social marginal cost of producing the good or service.

Consumer Surplus

At the foundation of cost-benefit analysis is the concept of consumer surplus. Consumer surplus is the gain represented by the difference between what all individuals pay in the market for a product and what they are willing to pay.¹⁵

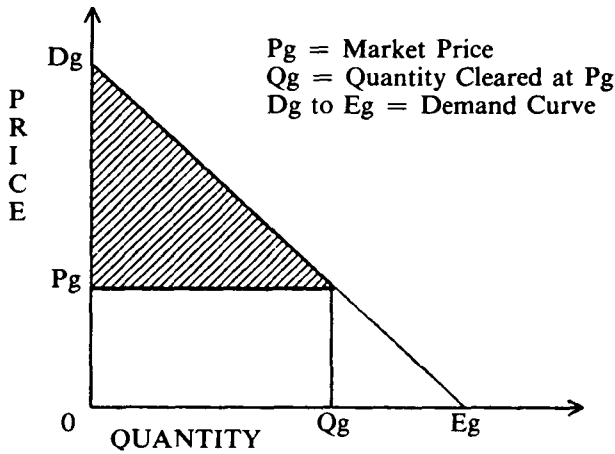


FIGURE 1

Graphically this concept is demonstrated as the shaded area under the "demand curve" in Figure 1 above.

The demand curve is a representation of the quantity of a good demanded in the market for any particular price offered in the market. It is the result of the utility maximization of all individuals, subject to their income constraints in the market. Utility functions are the subjective evaluations of an individual's desire for a good.¹⁶ Thus, the theoretical foundation of consumer surplus is the subjective desires of individuals.

A demand function is characterized by a negative slope, i.e., as the price increases the quantity demanded decreases. This characteristic is consistent with utility functions where an individual can rank all possible

15. *Id.* Consumer surplus is equal to the area under the demand curve up to the point represented by the quantity consumed in the market. See also E.J. MISHAN, *ELEMENTS OF COST-BENEFIT ANALYSIS* chap. 2 (1971). Hereinafter referred to as "MISHAN." Mishan offers consumer surplus as a practical way of measuring the net benefit of any action. The net benefit is the algebraic sum of the sums of money which would "make the individual no better or worse off than" he was before the market price changed.

16. K. HJALTE, K. LIDGREN, AND I. STAHL, *ENVIRONMENTAL POLICY AND WELFARE ECONOMICS* at 19-24 (1977). Hereinafter referred to as "HJALTE."

choices among goods consistently;¹⁷ where the average of a choice between two goods is not inferior to either choice;¹⁸ and where individuals prefer more to less. In short, the assumption is that individuals are rational and greedy. Obviously, since these are measures of subjective desires, they are only known as they are "revealed" in the market. As long as there is a functioning market the assumption is that individuals' desires are being met, subject to their income constraints. However, in any situation where there is no working market, or an imperfectly working market, a measurement of consumer surplus hinges on an estimate of the desire of individuals for a good. Thus, it is not difficult to see why economists always seek to find some market "proxy" to measure demand functions. It is because they have subsumed so many of the critical elements of economic theory in the assumptions of how a market works.

Pareto Optimality

The concept of consumer surplus, despite the problem of measurability, is only the first step in explaining why costs and benefits should be balanced when considering environmental regulations. The fundamental assumption in the theory of market economics is that individuals will only exchange goods and services when they are left at least as well off as before the trade. In a perfectly competitive market¹⁹ the resultant distribution of goods and services will be "efficient", in that, no individual can be made better off without making some other individual worse off. This condition is referred to as Pareto optimality.²⁰ The Pareto optimal decision is that "a movement from one situation to another improves social welfare only if no individual receives lower utility from the new situation and at least one person receives greater utility."²¹

Since a cost-benefit analysis measures net benefits as the net change in consumer surplus, then a decision to accept the alternative with the

17. *Id.* at 20. This is referred to as complete and transitive.

18. *Id.* at 20. This is referred to as the assumption of convexity.

19. The conditions of a perfectly competitive market are:

- (a) The market is all encompassing—that is, all goods and services that affect the consumers' welfare are exchanged on the market. Similarly, all products and factors of production are exchanged on the market.
- (b) The ownership of all natural resources and of all profits from firms is specified. In an economy with private ownership this assumption implies that the initial distribution of resources as well as the distribution of profits is completely specified.
- (c) All transactions take place without cost—that is, no resources are required for transactions nor for the distribution of the information necessary for such transactions. Further, ownership is determined without cost.

HJALTE at 24.

20. HJALTE at 15. Named after Vilfredo Pareto (1848-1923).

21. *Id.*

highest net benefit per unit of cost is consistent with the Pareto optimum criteria. This is shown graphically in Figure 2 below. If the market price of a good drops from P_1 to P_2 the quantity demanded increases. The resulting increase in consumer surplus is represented by the checkered area of Figure 2. The increase in consumer surplus is a measure of the increased benefit consumers in the market experience because of the lower price. In a situation where there is a positive net benefit, gainers can compensate losers so that no one loses. This is a Pareto optimum situation if such compensation occurs.²²

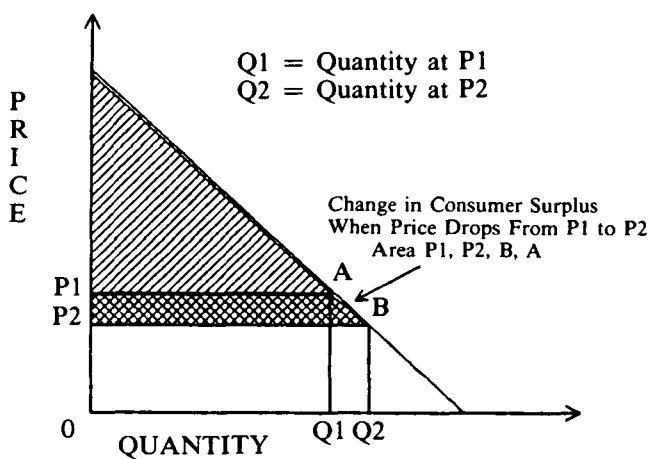


FIGURE 2

In a perfect market such compensation will occur through market transactions. A properly designed cost-benefit analysis measures the net change in consumer surplus between the base case and each alternative. Thus, if the alternative with the highest net benefit per unit cost is selected and the winners compensate the losers, then a cost-benefit analysis would select a Pareto optimal alternative.

Market Externalities

However, markets are not perfect, and imperfections such as externalities will preclude obtaining Pareto optimum conditions. An externality "is said to exist when one firm's production (or an individual's

22. MISHAN at 14, *see generally* chap. 2. This analysis is complicated somewhat by added a supply curve that is upward sloping or by considering the effect on factor rents. But the essential measurement remains the area under the demand curve, if it is assumed that factor rent effects are spread throughout the economy without a significant affect on price.

consumption) affects the production process (or standard of living) of another firm (or individual) in the absence of market transactions between them.”²³ Stated in other terms, an externality exists when the perceived private cost of an activity do not equal actual social cost of the activity. Pareto optimality requires that the “price equal the social marginal cost” and that “social marginal cost be increasing.”²⁴ Thus, in an imperfect market where the price is equated to the private cost of production and the social cost is different, then a Pareto optimum will not be obtained.

Environmental problems provide the best examples of negative externalities. For example, firm-1 discharges its waste product into a public waterway and firm-2’s ability to produce is reduced because it uses the polluted water as a raw material and must treat it before use. If firm-1 does not have to bear the cost of polluting the waterway, and firm-1 can prevent the pollution at a lower cost than firm-2’s treatment cost, the product produced by firm-1 will appear less costly than it actually is. Thus, more of firm-1’s product will be produced and less of firm-2’s product will be produced than would be produced if firm-1 did not generate the pollution. Furthermore, the total profits of the two firms are lower when the pollution cost is externalized, thus there is a social loss.²⁵ “Many if not all environmental problems are due to a [similar] breakdown in the price system: for one reason or another, it fails to convey a message about the relative scarcity of environmental resources to the users of these resources. . . .”²⁶

Choosing Among Alternative Methods of Addressing Externalities

There are a number of basic methods for addressing the problem of environmental externalities. They range from ignoring the problem, to pure market solutions, or to pure government regulation. Government can seek pure nonmarket regulation such as prohibitions against pollution or it can seek to affect market transactions with taxes or permitting requirements. All of the many possible permutations of market and nonmarket solutions are essentially different methods of initially allocating rights to use property or engage in activities, as a first order, and ensuring that the subsequent market rearrangement of these rights remains reasonable, as a second order.²⁷ Cost-benefit analysis, it is argued,

23. HJALTE at 7.

24. HENDERSON AND QUANDT at 273.

25. *Id.* at 272-275.

26. HJALTE at 7.

27. For an exhaustive, as well as exhausting, study of the possible permutations of pure and

is a powerful tool that can be utilized to choose among these alternatives. The solution assigning all costs to the polluter is a possible result of a cost-benefit analysis, however, allowing the cost of the pollution to be imposed on the general public is also a possible result.

A classic discussion of how to choose among various alternative solutions to a market externality is found in "The Problem of Social Cost" by Ronald Coase.²⁸ Coase's theorem is that, absent transaction costs, Pareto optimum conditions will be met regardless of the initial allocation of rights. Thus, in the two firm discussion above it makes no difference whether firm-1 is given the right to pollute or firm-2 is given the right to a pollution-free waterway. In either case the two firms will bargain to the same result. Both firms will negotiate within the constraints of their ability to profit from their respective firm's activity.

In the first case firm-1 initially has the right to pollute. Since it cost less for firm-1 to not generate the pollution than it does for firm-2 to treat the polluted water, then firm-2 will be able to pay firm-1 sufficiently to compensate it to stop polluting, and be better off because it has avoided the cost of treatment less the payment to firm-1. The result is Pareto optimal. In the alternate case firm-2 has the right to a pollution-free waterway. Firm-1 will pay firm-2 for the right to pollute up to the cost of not generating the pollution. Since this will not be sufficient to cover the costs of treatment, then firm-2 will not let firm-1 pollute. The result is the same regardless of the initial allocation of rights, when transactions costs (the cost of negotiating the arrangements in the market) are zero. Changing the facts so that the cost of preventing the pollution by firm-1 is higher than the cost of treatment for firm-2 does not change the analysis. Regardless of who is initially assigned the property right, the result will be that pollution will be allowed. Either firm-1 will compensate firm-2 for the treatment cost, if firm-2 has a right to a pollution-free stream, or firm-2 will absorb the treatment cost, if firm-1 is assigned the right to pollute.

However, even Coase recognizes the reality that the real world does have transaction costs which are often significant enough to prevent a bargained-for rearrangement of rights to result in Pareto optimum conditions. Coase states that:

One arrangement of rights may bring about a greater value of production than may another. But unless this is the arrangement of rights established by the legal system, the cost of reaching the same result by

mixed methods of addressing externalities *see generally* G. CALABRESI, *THE COSTS OF ACCIDENTS* (student 2d ed. 1977); and G. CALABRESI & R. BOBBITT, *TRAGIC CHOICES* (1978).

28. R. Coase, *The Problem of Social Cost*, 3 *J. Law & Econ.* 1 (1960).

altering and combining rights through the market may be so great that this optimal arrangement of rights, and the greater value of production which it would bring, may never be achieved.²⁹

It is not difficult to imagine insurmountable transaction costs when the two firm example is expanded to include hundreds of firms and individuals on both sides of the negotiations. Coase's approach to the problem is to view the solution as an initial decision of allocating rights to certain activities. The essential tool in that decision is a comparison of the different alternatives and a selection of the alternative with the highest society net output. As Coase states it:

The problem which we face in dealing with actions which have harmful effects is not simply one of restraining those responsible for them. What has to be decided is whether the gain from preventing the harm is greater than the loss which would be suffered elsewhere as a result of stopping the action which produces the harm.³⁰

In short, he recommends a cost-benefit analysis to select among possible alternative courses of action.

Coase's recommended course of action breaks sharply with the traditional approach to externalities. That traditional approach saw externalities as the result of a difference between private cost and social cost and focused exclusively on the equating of private cost to social cost, primarily through regulation, taxation and compensation schemes. Coase's approach recognizes the reciprocal nature of the problem and offers a wider range of possible solutions, which include the tax and compensation alternative. However, Coase does caution that the use of such a cost-benefit analysis is valid only as long as *all social* cost and benefits are fully considered.³¹

Coase provides a compelling argument for using cost-benefit analysis to decide which alternative assignment of rights will produce maximum social benefit. The conclusion could be that the first step in resolving any conflict involving environmental externalities would be a comprehensive cost-benefit analysis. Yet, even if that were possible, the result would only be an identification of the allocation of rights that would potentially result in a maximization of social benefits.

Potential Pareto Optimality and its Associated Problems

Implicit in Coase's description of determining the initial allocation of rights is a recognition that the resultant Pareto optimality is a product

29. *Id.* at 16. See also W. HIRSCH, *LAW AND ECONOMICS* at 214-217 (1979).

30. R. Coase, *The Problem of Social Cost*, 3 *J. Law & Econ.* 1, 27 (1960).

31. *Id.* at 43.

of the rearrangement of rights in the market. If a cost-benefit analysis is conducted without consideration of the possible market rearrangements, and the results are reported as net benefit per unit of cost, then the choice of the alternative with the highest net benefit only identifies that alternative with a *potential* Pareto optimal outcome.³² In addition there remain the difficulties of measurement discussed above and the problems that arise when outlays and benefits appear at different points of time.

If the alternative with the highest net benefit is selected, and in subsequent market transactions the gainers (those assigned rights) do not compensate the losers (those not assigned rights) then Pareto optimum conditions will not exist. This is often referred to as a distribution problem, since it involves the subsequent distribution of wealth resulting from the initial assignment of rights. The distributional problems often make the selection of a particular alternative "politically" unacceptable. It has been suggested by Guido Calabresi that the Coase theorem, "reveals the bankruptcy of the neoclassical welfare economics' Pareto standards as guides for policy making."³³ Calabresi suggested in the alternative using something like the following:

in any proposed reallocation of resources the winners must appear to be able to compensate the losers and the actual distributional change brought about must either be, in some sense, favorable or not so unfavorable as to outweigh, given interpersonal comparison, the fact that some have gained more than other have lost. This efficiency standard may be awkwardly entitled potential Pareto superiority with tolerable distributional effects.³⁴

The selection of an alternative in a cost-benefit analysis should be conditioned by the expected redistribution of wealth in the market. For example, a choice which makes the rich better off and the poor worse off can have a net benefit for society. In short, the rich gain more than the poor lose. However, the political consequences of choosing such an alternative must enter into the final choice.³⁵

The second problem is that of measuring the cost and benefits. Often it is extremely difficult to determine the value of a particular item in a cost-benefit analysis. For example, what is the value of a certain life saved in the future? Or what is the value of the recreational use of a waterway? Since fundamentally the economist will attempt to evaluate

32. MISHAN at chap. 2.

33. G. CALABRESI & R. BOBBITT, *TRAGIC CHOICES* at 85-86 (1978).

34. *Id.*

35. It is this problem which results in Calabresi's recommendation in mixed market/nonmarket solutions to problems of this nature. It is often the political realities attached to a particular redistribution of wealth that dictate some choice other than g the potential Pareto optimum choice. See generally G. CALABRESI & R. BOBBITT, *TRAGIC CHOICES* (1978).

these items using utility theory, then the value is the sum of the relative subjective desire of all relevant individuals for the good. At this point it becomes necessary to survey what individuals would be willing to pay for avoiding a certain future death. Or, with less difficulty, to determine what individuals are willing to pay for avoiding a certain "risk" of a future death. On this issue Calabresi has stated that:

Pareto standards, having arisen out of the ideology of classical welfare economics, do not grant to nonmarket expressions of preference—however accurate they may in fact be, and one must justifiably doubt that questionnaires, interviews, tests, and the like, perfectly reflect true preferences—the axiomatic validity accorded those revealed in market action.³⁶

E.J. Mishan recognizes this problem and suggests that an economist's responsibility is to return the problem to the political decisionmaker without quantification, since the validity of a cost-benefit assessment is that all elements can be quantified. Mishan states that the economist unable to quantify all elements necessary to the analysis "serves the public better by confessing the truth: that, with the existing techniques and information, he is unable to discharge his task."³⁷

An additional problem associated with measurability is the need to put all quantifications in present time value for comparison. The technique utilized by economists is to monetize all items and discount future values to a present value. This procedure become particularly suspect when a future life is involved. The implication of a present value of a future life is that a life is worth less today the further into the future the analysis extends.

In conclusion, neoclassical economic theory argues that the proper method for resolving the problem of externalities in society is to evaluate the social costs and benefits of reasonable alternatives and to select that alternative with the highest net benefit per unit cost. A modified version of that rule is not to use such analysis when the elements under consideration cannot properly be measured; and to recognize the potential nature of the Pareto optimal outcome, and thus correct for any distributional problems. This modified rule shall be referred to as the "cost-benefit guideline" throughout the remainder of this paper.

That cost-benefit guideline, which is the basis for the economic impact study requirements of § 27(b) of the IEPA, is in conflict with the

36. *TRAGIC CHOICES* at 84.

37. *MISHAN* at 19-20. Mishan takes a more restrictive view of the role of an economist than that of Calabresi described in note 35 above. Calabresi is much more willing to see the economists interact in the political process while Mishan sees the economist as a critic, independent, and untainted by the political process.

requirement of § 2(b) of the IEPA which requires that “adverse effects upon the environment [of pollution] are fully considered and borne by those who cause them.”³⁸ The required result of § 2(b) will only occur when the economic impact study of § 27(b) indicates the highest benefit to cost ratio when costs are assigned to the source of the environmental harm. This conflict is the result of the 1975 amendments to the IEPA and the general effort of neoclassical economists and their allies to constrain environmental activism with economic principles. Those 1975 amendments, however, have not proved to be significant constraints. A more specific outline of the economic impact study requirements of the IEPA follows, as well as an analysis of the studies (or negative declarations) that have been presented to the Board since the 1975 amendments.

ECONOMIC THEORY IN USE: ECONOMIC IMPACT STUDIES AND NEGATIVE DECLARATIONS IN ILLINOIS ENVIRONMENTAL RULEMAKING PROCEEDINGS

Section 27(b) of the IEPA requires that the Board consider the economic impact of any proposed regulation on which it must hold hearings. Specifically that subsection of the IEPA requires that the Board consider the economic impact study completed by the Department pursuant to § 4 of An Act In Relation To Natural Resources. This section requires that the Department: prepare a comprehensive “study of the economic impact of existing [at the time of the 1975 amendments] rules and regulations of the Pollution Control Board;”³⁹ “study the economic impact of selected existing and proposed environmental control regulation on a continuous basis;”⁴⁰ and “prepare an economic impact study for all proposed regulations, for which hearings are required;”⁴¹ except when the preparation of the study is too costly or would provide only limited information.⁴² Furthermore, the Department is required to prepare an annual report to the legislature reviewing “the ‘state of the art’ environmental benefits assessment.”⁴³ Those subsections are analyzed for any conflict with § 2(b) of the IEPA, and for the ability of the Board to conform with the statutes and also follow the cost-benefit guideline developed above.

The IEPA explicitly requires that the “economic impact” of any proposed rule shall be considered in hearings before the Board. That the

38. IEPA § 27(b).

39. AN ACT IN RELATION TO NATURAL RESOURCES § 4(a).

40. *Id.* § 4(e).

41. *Id.* § 4(c).

42. *Id.* § 4(d).

43. *Id.* § 4(f).

Board shall consider in those same hearings the economic impact study required from the Department, as well as public comments on that study. The Board is required, "in its written opinion, [to] make a determination, based upon the Department's study and other evidence in the public hearing record, as to whether the proposed regulation has any adverse economic impact. . . ."44 There are no substantive exceptions to that requirement. There are only temporary exceptions for emergency situations.⁴⁵ It is interesting, however, to note that the statute does not explicitly require that the Board reject any proposed rule in the face of a finding that there is adverse economic impact. Nor, and probably more importantly, does the statute require that the Board reject a proposed rule simply because the *economic impact study* indicates that there is adverse economic impact. As a practical matter, it becomes extremely difficult for the Board to adopt a rule with such a finding, but it has been done.⁴⁶ The language of the statute does not prevent the Board from selecting the alternative with the highest net benefit per unit cost. Yet it allows the Board to reject alternatives when measurement problems and distribution problems become paramount.

The Department is required to review existing regulations on a continuous basis.⁴⁷ The economic impact study requirements are the same in all those instances. When the Department makes a finding that a particular existing rule has an "adverse economic impact" it must publish its findings and supporting documents, and file the report with the Board.⁴⁸ The Board must hold hearings on the report, but is not required to automatically find the rule unreasonable. The Board must "specifically determine whether, as a result of their findings and conclusions, any regulations of the Pollution Control Board shall be modified or eliminated."⁴⁹ Since economic impact studies are not absolutely determinative, significant discretion remains in the Board's hands. This discretion is consistent with the cost-benefit guideline. However, it is important to note that the Department has not taken any action to comply with these requirements of An Act In Relation To Natural Resources. The cost of producing an economic impact statement for all existing regulations (as

44. IEPA § 27(b).

45. *id.* §§ 27(b)-27(c).

46. In Docket R82-2 the Board adopted a regulation concerning the regulation of radioactive air emission from nuclear facilities despite the conclusion of the economic impact study that the costs outweighed the benefits. See Final Order, In the Matter of Title 35: Environmental Protection; Subtitle I: Atomic Radiation; Chapter I: Pollution Control Board; Part 100: Radiation Hazards; October 24, 1985 (mimeo).

47. AN ACT IN RELATION TO NATURAL RESOURCES §§ 4(a) and 4(e).

48. *Id.* § 4(a).

49. *Id.* § 4(b).

of 1975) and for reviewing all current regulations is enormous. A study of a single regulation may require an expenditure of several thousand dollars. A study of all existing regulations would be a multimillion dollar proposition.

The "economic impact" study required of the Department is a cost-benefit analysis. Section 4(c) of An Act In Relation To Natural Resources requires that the Department prepare an "economic impact study for all proposed regulations, for which hearings are required and authorized by the," Board and that such studies shall include "those factors set forth in subsection (a)."⁵⁰ Section 4(a) specifically states that the economic impact study shall include the "health, welfare, and social costs and benefits."⁵¹ Section 4(a) goes on to list specific elements for consideration such as the effect of the regulation on the products of agriculture, commerce and industry, consumer goods, and local government taxes and services. This rendition of specifics in the statute is largely reinforcement for the general comprehensive requirement that all relevant social costs and benefits should be considered. Those requirements are clearly consistent with the cost-benefit guideline requirement that a cost-benefit analysis be the fundamental economic tool for analyzing alternatives and that all relevant social costs and benefits be considered.

The strongest provision constraining the use of cost-benefit analysis is § 4(d) of An Act In Relation To Natural Resources. That subsection states that:

The Director [of the Department] may make a finding that an economic impact study is unnecessary in any of the following situations:

- (1) The regulation has no economic impact;
- (2) The net economic impact of the regulation is favorable and the costs of compliance are small or are borne entirely by the proponent of the regulation;
- (3) The economic impact of the regulation is so difficult to measure that a formal study would not generate useful information; or
- (4) The cost of making a formal study is economically unreasonable in relation to the value of the study to the Board in determining the adverse economic impact of the regulation.⁵²

Subsections 4(d)(1) and 4(d)(2) allow the Department to admit the obvious when it is clear that no or insignificant economic impact will result from a proposal. Subsection 4(d)(3) explicitly recognizes that some studies may not be feasible because the economic impact is too difficult to measure. That is clearly consistent with the cost-benefit guideline. Sub-

50. *Id.* § 4(c).

51. *Id.* § 4(a)(1).

52. *Id.* § 4(d).

section 4(d)(4) recognizes the significance of the cost of regulation. This also remains consistent with the cost-benefit guideline because the cost of administering a regulatory program is part of the total "social" costs that must be considered. Section 4(f) implicitly recognizes that such administrative costs can overwhelm the usefulness of a cost-benefit analysis.

Sections 4(d) and 4(f) of An Act In Relation To Natural Resources and § 27(b) of the IEPA recognize the measurability and distributional problems associated with economic impact studies and constrain improper use of the studies. Section 4(f) of An Act In Relation To Natural Resources requires that the Department prepare "on an annual basis a review of the 'state of the art' environmental benefits assessment."⁵³ Furthermore, that subsection requires that the current "state of the art" data and techniques be utilized in economic impact studies. This subsection implies that the current "state of the art" for measuring benefits is likely to improve in the future and that a positive effort to incorporate the latest techniques and data is sufficiently important to warrant specific mention in the statute. Also, § 27(b) of the IEPA allows the Board to use "other evidence in the public hearing record" when making its determination of economic impact. Thus, the Board is not simply bound to the Department's study and can consider issues of measurability or distributional problems if raised in evidence.⁵⁴ The Board has sufficient discretion to follow Mishan's advice⁵⁵ that an economist not attempt to develop a cost benefit analysis when the elements cannot properly be measured.

In conclusion, the provisions of the IEPA and An Act in Relation To Natural Resources allow for the application of the cost-benefit guideline developed above in rulemaking deliberations before the Board. Those statutes call for a cost-benefit study and allow the Board to chose the alternative with the highest benefit to cost ratio. At the same time the legislature has delegated sufficient discretion to the Board and the Department to allow for affirmative decisions both when a cost-benefit study cannot reasonably be completed, and when the cost benefit study indicates some negative economic effect will result. That is consistent with the cost-benefit guideline in that the legislature has recognized the difficulty of measuring some benefits, as well as the distributional

53. *Id.* § 4(f).

54. IEPA § 27(b). In fact, the Board is noted for considering at length the measurability and distributional problems associated with proposed regulations, see D. SWARTZMAN, R. LIROF & K. CROKE, COST-BENEFIT ANALYSIS AND ENVIRONMENTAL REGULATIONS: POLITICS, ETHICS, AND METHODS at 30-31 (1982).

55. See *supra* text accompanying note 37.

problems that might be generated if a strict rule of implementing only the highest net benefit to cost ratio alternatives were followed.

Economic Impact Studies: The Fundamental Difficulty of Measuring the Benefits of Environmental Regulation

A review of the economic impact studies issued by the Department or its predecessor was completed for this paper. That review showed that the measurement of benefits associated with environmental regulations remains a significant problem. The Department continues to be unable to provide reliable estimates of the human health effects of various forms of environmental regulations. In fact, the inability of the Department to reduce the uncertain results when measuring human health benefits from environmental regulation makes most of the economic impact studies unusable or trivial.

The last report provided to the legislature by the Department of the assessment of benefits was Documented No. 79/19 issued in July of 1979.⁵⁶ That report is a thoughtful examination of each economic impact study issued up to that time. Some particular criticisms reported in Document No. 79/19 are: that the studies generally failed to "fully grasp, and then explore, the interactions between pollutant and environment and living organisms that result in damages;"⁵⁷ and that "many studies present final numbers, without qualification, in their Executive Summaries," thus understanding the uncertainty surrounding the numbers.⁵⁸ While the author of Document No. 79/19 evaluates the economic impact studies favorably the author cautions that significant progress must be made in the proper evaluation of benefits in future studies. Although § 4(f) of An Act In Relation To Natural Resources requires that the Department provide an annual report similar to that in Document No. 79/19, the Department has not yet issued a similar report. The only annual report which followed Document No. 79/19 is Document No. 81/34⁵⁹ and that document does not report the results of any analysis of the benefit assessment methods used since Document No. 79/19.

Problems with benefit assessment in economic impact studies issued since Document No. 79/19 are of three basic types. They are: attempt-

56. ILLINOIS INSTITUTE OF NATURAL RESOURCES, ENVIRONMENTAL BENEFITS ASSESSMENT IN ECONOMIC IMPACT STUDIES, July 1979, Document No. 79/19.

57. *Id.* at 44.

58. *Id.* at 47.

59. ILLINOIS INSTITUTE OF NATURAL RESOURCES, ECONOMIC IMPACT ANALYSIS PROGRAM THE FIFTH ANNUAL REPORT JULY 1, 1980 - JUNE 30, 1981, September 1981, Document No. 81/34.

ing to measure benefits for regulations that are required by federal law and generally tied to the availability of federal funds; identifying but failing to quantify benefits; and inconsistency between different economic impact studies when measuring benefits where scientific uncertainty limits the ability to quantify the benefits.

Examples of the first problem are found in Document Nos. 82/05,⁶⁰ 82/06,⁶¹ and 83/20.⁶² These are the reports of studies provided in instances where the Board was considering regulations that, in one form or another, were required by federal law. In most cases the benefits were administrative cost reductions or access to federal money. The Department's failure to issue a negative declaration pursuant to § 4 of An Act In Relation To Natural Resources in these cases is the prime example of the Department's failure to understand its duties under Illinois law.

For example, Document No. 82/05 is the report of an economic impact study of a proposal to keep Illinois regulations in conformity with the Safe Water Drinking Act.⁶³ The main benefit was maintaining access to federal money.⁶⁴ Document No. 82/06 reports a study of a proposal to incorporate future changes in federal water pollution regulations into Illinois regulations.⁶⁵ In that case it was not possible to estimate the benefits of unknown future regulatory changes. Similarly, Document No. 83/20 reports the study in another case where it is necessary to keep Illinois air pollution regulations in conformity with the United States Environmental Protection Act.⁶⁶ In all of these cases, unless the Department was willing to undertake a cost-benefit analysis of the federal regulations, the Department should not have conducted the studies. The Department should have issued a negative declaration pursuant to § 4(b)(3) of An Act In Relation To Natural Resources because the benefits of the federal regulations are too difficult to measure.

Examples of the second problem are found in the studies reported in Documents Nos. 82/10,⁶⁷ 82/20,⁶⁸ 82/21,⁶⁹ 82/23,⁷⁰ 83/03,⁷¹ and 83/

60. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, ECONOMIC IMPACT STUDY OF R81-11 TRIHALOMETHANE STANDARDS FOR PUBLIC WATER SUPPLIES, February 1982, Document No. 82/05.

61. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, ECONOMIC IMPACT STUDY OF PROPOSED IPCB AMENDMENTS TO WATER POLLUTION REGULATIONS, R80-6, February 1982, Document No. 82/06.

62. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PROPOSED REGULATION R82-1: REMANDED PARTICULATE REGULATIONS 203(G)(1) AND 202(B), June 1983, Document No. 83/20.

63. See *supra* note 60 at 2.

64. *Id.* at 56.

65. See *supra* note 61 at iv.

66. See *supra* note 62 at 3.

67. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PRO-

04.⁷² In all these cases the Department identifies benefits but fails to assess them.

Document No. 82/10 is the report of a study of a request for variance from air emission restrictions on a foundry. The Department assumes for the assessment of human health effects resulting from granting the variance that, because the requested level of emission would not result in a violation of the National Ambient Air Quality Standards then "there should be no adverse effect on health."⁷³ No further explanation is given of why this assumption should be considered valid.

Document No. 82/20 reports another study in which air quality was at issue. The rule under consideration in this study was a new source review process for PSD areas.⁷⁴ Although the study indicated that the new process would have a beneficial effect, the study concluded that the effect on new sources of the review process was not predictable and thus "the use of standard environmental engineering methods employed in previous economic impact statements to estimate air quality is not possible."⁷⁵

Another example is found in Document No. 82/21 which reports a study of a request for a variance from water emissions requirements for a municipal sanitary district. In this case the elimination of combined sewer overflows "would, in theory, reduce the public health risk" yet no estimate was made because, "no public health problems had been reported."⁷⁶ This is an amazing logical sequence. A prospective probability of harm is not investigated against a retrospective lack of reports of harm. There is no evaluation of: the changing nature of use of

POSED REGULATION R81-15 TO ALLOW A RELAXATION OF CARBON MONOXIDE EMISSION LIMITS FOR ROWE FOUNDRY & MACHINE Co., May 1982, Document No. 82/10.

68. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PROPOSED REGULATION R81-16: REVISION OF MAJOR SOURCE CONSTRUCTION AND MODIFICATION, August 1982, Document No. 82/20.

69. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PROPOSED REGULATION R80-16: FILED BY THE GALESBURG SANITARY DISTRICT TO AMEND CHAPTER 3, WATER POLLUTION REGULATIONS, October 1982, Document No. 82/21.

70. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF SECTION 21(H) OF THE ENVIRONMENTAL PROTECTION ACT OF THE STATE OF ILLINOIS: PROPOSED REGULATION OF R80-19, November 1982, Document No. 82/23.

71. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, ECONOMIC IMPACT ASSESSMENT REGARDING R82-3 A SITE SPECIFIC EXEMPTION FOR THE ALTON WATER COMPANY, January 1983, Document No. 83/03.

72. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PROPOSED REGULATION R81-18: CERTIFICATION OF WASTE DISPOSAL SITE OWNERS AND OPERATORS, December 1982, Document No. 83/04.

73. *See supra* note 67 at iv.

74. *See supra* note 68 at vi.

75. *Id.* at xiii.

76. *See supra* note 69 at xiii.

the water stream; whether increasing population will increase the probability of future harm; nor whether the lack of reported harm reflected a failure of proper health evaluation in the area.

A similar example of identifying a human health benefit and failing to measure it is reported in Document No. 82/23. There the health effects of controlling the land disposal of hazardous hospital wastes are not quantified. The reason given is that "no data exists on the incidence of disease from land disposal."⁷⁷ Failing to quantify aesthetic improvements can be found in Document No. 83/03.⁷⁸ A final example of failing to quantify the benefit of preventing a future environmental contamination from a waste disposal site is found in Document No. 83/04.⁷⁹

In all these examples, because the Department's failed to quantify one or more elements of benefits from environmental regulation the resulting cost-benefit comparison is purely speculative. The analysis remains the subjective evaluation of the study author(s).

The third problem is the inconsistent treatment between different studies of scientific uncertainty when measuring benefits. A dramatic example of this problem is evident in a comparison of the economic impact studies reported in Document No. 83/09⁸⁰ and Document No. 83/30.⁸¹ The study reported in Document No. 83/09 considered the effects of various "bubble" policy air emission controls. The study in Document No. 83/30 evaluated the effect of implementing state emission standards for the emission of radioactive materials into the atmosphere.

Both of these studies attempted to estimate the human health effects of the air quality controls. Both use the same source of estimates for the evaluation of human health effects, the Freeman Report.⁸² However, the study in Document No. 83/09 clearly articulated the uncertainty of the Freeman estimates and presented its data with ranges.⁸³ The study in Document No. 83/20 did not even indicate that any uncertainty existed and presented its data as point estimates.⁸⁴ Furthermore, the latter study

77. See *supra* note 70 at 2.

78. See *supra* note 71 at opinion, unnumbered.

79. See *supra* note 72 at 15.

80. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PROPOSED REGULATION R81-20: ALTERNATIVE CONTROL STRATEGIES: BUBBLE POLICY, February 1983, Document No. 83/09.

81. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PROPOSED REGULATION R82-2: ATOMIC RADIATION REGULATIONS, October 1983, Document No. 83/30.

82. A. MYRICK FREEMAN III, THE BENEFITS OF AIR AND WATER POLLUTION CONTROL: A REVIEW AND SYNTHESIS OF RECENT ESTIMATES, December 1979, (prepared for the U.S. Council on Environmental Quality).

83. See *supra* note 80 at 118 and xvii.

84. See *supra* note 81 at 72.

did not estimate the effects of morbidity and genetic damage while the former did. This gross inconsistency in studies issued within months of each other is indicative of the degree to which the Department has lost control over the quality of the benefits assessment in economic impact studies it conducts.

In conclusion, the Department has failed to ensure that economic impact studies address the substantive issue of determining the benefits associated with environmental regulations. The Department does not continually review the state of the art of benefits assessment as required by An Act In Relation To Natural Resources. Most importantly, the Department does not ensure that a consistent methodology is used across all studies which evaluate the benefits of preventing detrimental effects on human health quality. Aside from focusing more resources on improving benefits assessment, the Department should also exercise its discretion to declare economic impact studies unnecessary in cases where the benefits cannot be properly quantified.

Negative Declarations: Their Use and Misuse

The Department has utilized the authority pursuant to § 4(d) of An Act In Relation To Natural Resources almost exclusively in cases of requests for variance or site specific rules. Also, in those cases the Department has relied heavily on § 4(d)(4) without any effort to quantify the administrative costs involved. These tendencies on the part of Department personnel are reducing the usefulness of the economic impact studies. That, and the fact that the Department has not reported to the legislature on the current status of benefit assessment, as required by § 4(f) of An Act In Relation To Natural Resources, indicates that the Department is adrift with no direction or focus in this area of its responsibilities.

The Department has issued 28 negative declarations out of 77 opportunities, or 36% of the time. However, the Department has issued a negative declaration in excess of 80% of the time when it considered site specific proposals or variances.⁸⁵ In the 28 instances where a negative declaration has been issued the following subsections have been cited for authority:

85. Telephone interview with Bonnie Meyer, a staff employee for the Department's Economic Analysis Program, July 1985. Of the 28 negative declarations issued 20 are for site specific rules or request for variances. Of these 20, 17 cite § 4(d)(4) as authority for the negative declaration. The 20 dockets are Department docket nos.: R81-29, R82-11, R83-11, R83-19, R83-7, R83-55, R83-26, R83-29, R83-34, R83-30, R83-33, R83-36, R83-12, R83-32, R83-25, R83-31, R84-30, R84-16, R84-13, and R84-45.

SUBSECTION	# OF TIMES CITED
4(d)(1)	1
4(d)(2)	3
4(d)(3)	0
4(d)(4)	19
4(d)(1) & 4(d)(4)	3
4(d)(2) & 4(d)(4)	1
4(d)(3) & 4(d)(4)	<u>1</u>
TOTAL	28

It is clear that § 4(d)(4) is the most frequently cited (24 out of 28 times) statutory authority for a negative declaration.⁸⁶ Subsection 4(d)(3) has never been cited as the exclusive reason for a negative declaration. Subsection 4(d)(4) goes to the issue of administrative costs. Subsection 4(d)(3) goes to issues of economic theory and measurability. This data indicates that the Department primarily uses the negative declaration in cases of site specific rules and requests for variance where the administrative cost of developing a study are not warranted. These statistics indicate that the Department considers problems of method or measurability to be almost nonexistent. A closer analysis of the letters issued by the Department to the Board in which the rationale and authority for the negative declaration is described gives no real indication of what level of administrative burden the Department considers inappropriate. Not one of the negative declarations that cites § 4(d)(4) as authority provides a quantified estimate of the cost of producing a study.⁸⁷

Furthermore, as indicated in the previous section of this paper, there have been numerous instances in which the Department should have found that the benefits were not measurable and issued a negative declaration pursuant to § 4(d)(3) of An Act In Relation To Natural Resources. Employees at the Department have wrongly interpreted § 4 for exclusive use in variance request proceedings.⁸⁸ The effect is to produce study after study in which the benefits are admittedly impossible to measure or both the cost and benefit estimates are trivial. In most cases this results in a simple waste of paper, however, the damage could be more significant in a rulemaking concerning important environmental issues.

One example is a case, Board docket R82-2, in which the Department did an economic impact study when it should have issued a negative declaration.⁸⁹ In R82-2 the Illinois Department of Nuclear Safety

86. See Appendix A.

87. See Appendix A for summary of the content of each of the letters of negative declaration.

88. See *supra* note 85.

89. DEPARTMENT OF ENERGY AND NATURAL RESOURCES, THE ECONOMIC IMPACT OF PRO-

proposed regulations that would give it enforcement power over radioactive air emissions from nuclear facilities in Illinois. The standards proposed were identical to the United States Environmental Protection Agency's emission standards published in 40 C.F.R. Part 190. Thus, essentially R82-2 proposed to enhance the enforcement of federal standards with state enforcement power. The Department completed an economic impact study that showed that the costs outweighed the benefits for such a program.⁹⁰

The fundamental flaw is that study remains that there is no reasonable method for making a valid comparison of costs and benefits for the small changes resulting from such a program. The Department of Nuclear Safety, in informal discussions with the Department, urged that the methodology for the study attempt to include the costs and benefits of the implementation of the federal standards in Illinois. It was generally agreed that was not possible in the context of R82-2. Also no method could be agreed upon for estimating the benefits associated with the additional state enforcement action.⁹¹ The problem was the basic assumption concerning the degree of effectiveness of the federal enforcement activity. Evidence in the case indicated that no independent federal enforcement program existed, the federal program relies entirely on licensee self-reporting. Some staff members at the Department argued that this case presented an instance where the costs and benefits could not be measured in a formal study.⁹² The Board eventually concluded that the study did not reliably demonstrate that costs exceeded benefits and ordered the regulation published.⁹³ The Department should have issued a negative declaration under § 4(d)(3) of An Act In Relation To Natural Resources, because the economic impact of the "regulation is so difficult to measure that a formal study would not generate useful information."

The Department has failed to develop state of the art methods for assessing the benefits associated with environmental regulations, particularly human health benefits. The Department has failed to make proper use of its discretion under § 4(d) of An Act In Relation To Natural Resources. This failure has resulted in a significant reduction in the quality

POSED REGULATION R82-2: ATOMIC RADIATION REGULATIONS, October 1983, Document No. 83/30. See also Final Order, note 46 *supra*, at 8.

90. *Id.*

91. Interview with William Frerichs, in May of 1985, who was Manager of Research Section for the Department from 1980 to 1984. Mr. Frerichs was responsible for developing the necessary data to decide upon negative declarations.

92. *Id.*

93. See *supra* note 46.

and usefulness of the economic impact statement in Illinois environmental regulation. This problem is beginning to spill over into the judiciary.

CURRENT CASE LAW

There is little case law concerning economic impact studies in rulemaking before the Board. In fact there are only five cases. Four of these cases are relatively uninteresting since they involve the transition period in 1975 when the requirement that an economic impact study be done for all proposed rules was first promulgated.⁹⁴ The Board's decision, in those four cases, were delayed for such a long period of time that, when the decisions were remanded by the court, the court concluded that economic impact studies were necessary to complete the record. However, one case, *Citizens Utilities Company of Illinois vs. Illinois Pollution Control Board*,⁹⁵ handed down on June 17, 1985 speaks directly to the use of economic impact studies in rulemaking proceedings. The decision in *Citizens Utilities* is a good example of a failure of the judiciary to understand either the IEPA and An Act In Relation To Natural Resources or the theoretical basis for § 27(b) of the IEPA and § 4 of An Act In Relation To Natural Resources.

Citizens Utilities operated a sewage treatment plant. The plant discharged water into the Lily Cache Creek. The discharged water was treated sufficiently to meet secondary treatment standards. In 1972 the Board adopted "general use" water quality standards. In 1975 the Illinois Environmental Protection Agency ("Agency") imposed these standards on Citizens Utilities' permit. The effect of the implementation of general use water quality standards was stricter emissions requirements for Citizens Utilities. It petitioned the Board for site specific standards less stringent than the general use standards. An economic impact study was completed for the proceeding before the Board. The Agency presented evidence opposing Citizens Utilities' proposal. The Board dismissed Citizens Utilities' petition commenting on the economic impact study by stating that the data provided by the study was insufficient to "make a determination as to whether it is economically reasonable to maintain the general use water quality standards along the creek."⁹⁶

94. The Illinois State Chamber of Commerce et al v. The Pollution Control Board, 78 Ill. 2d 1, 398 N.E.2d 9 (1979); Commonwealth Edison Company v. The Pollution Control Board, 80 Ill. App. 3d 508, 400 N.E.2d 52 (1st Dist. 1980); The Illinois State Chamber of Commerce v. The Pollution Control Board, 67 Ill. App. 3d 839, 384 N.E.2d 922 (1st Dist. 1978); Illinois State Chamber of Commerce v. Pollution Control Board, 78 Ill. 2d 1, 398 N.E.2d 9 (1979); and Ashland Chemical Company v. The Pollution Control Board, 64 Ill. App. 3d 169, 381 N.E.2d 56 (3d Dist. 1978).

95. 134 Ill. App. 3d 100, 487 N.E.2d 1213 (3rd Dist. 1985).

96. *Id.* at 1216-1217.

Judge Scott remanded the Board's decision on the basis that the Board "cannot avoid the statutorily required economic determination [of § 27(b) of the IEPA], even though, as the Board opined, it is difficult to quantify certain 'aesthetic impacts.'"⁹⁷ Judge Scott read the requirement of § 27(b) of the IEPA without giving consideration to the responsibilities and discretion delegated to the Department by § 4 of An Act In Relation To Natural Resources. That latter section specifically authorizes the Department to reject the need for an economic impact study when the "economic impact of the regulation is so difficult to measure that a formal study would not generate useful information. . . ."⁹⁸ If the Department can, pursuant to § 4, make a determination that elements are impossible to measure or a study is impractical even before a study is completed, then it is an extremely rigid reading of the statute that would not allow the Board to find the same problem when the actual study has been attempted. Since the legislature has recognized that some environmental problems cannot be quantified without great difficulty, and indeed may be impossible to quantify, it is unreasonable of the courts to impose a requirement on the Board that it find evidence where no reliance evidence is available.

Judge Scott's decision is flawed on an even more fundamental point. Judge Scott did recognize that the Board was "technically" only required to make a determination of economic impact when "adopting any . . . new regulation" and not when rejecting a proposed regulation.⁹⁹ However, he went on to state that the Board was adopting the existing standards when it rejected the request for site specific standards. In that context, he argued that a cost-benefit evaluation of the existing standards was necessary. This holding represents the worst possible understanding of the nature and role of cost-benefit analysis.

As was pointed out earlier, most cost-benefit analysis measures the change in consumer surplus associated with alternative actions. In this case the base alternative is the existing set of standards. If consideration of a variance is effectively a repromulgation of the existing rule, then the cost-benefit analysis must include an alternative of eliminating the existing regulation, in which case no variance would be necessary. Such an alternative could not be considered without reviewing the effect of releasing all individuals from the constraints of current regulation. This converts a simple variance request into a full blown rule making proceeding

97. *Id.*

98. AN ACT IN RELATION TO NATURAL RESOURCES § 4(d)(3).

99. *See supra* note 97.

affecting all parties who have an interest in the existing regulation. Section 27(b) of the IEPA implicitly recognizes this dilemma and does not impose a requirement for determining the economic impact of *rejecting* a proposed regulation. Judge Scott has stretched the statute entirely out of shape and creates potential havoc for the Board. The proper route for reevaluating the economic reasonableness of the existing standards is through continuing the review authority of the Department under § 4(e) of An Act In Relation To Natural Resources.

CONCLUSIONS

Economic impact studies required in environmental rulemaking proceedings in Illinois are not contributing meaningful information for decisionmakers. Economic theory suggests that a cost-benefit analysis can assist decisionmakers in selecting among alternative environmental regulations. The selection of the alternative with the highest net benefit to cost ratio will result in an "efficient" allocation of resources in Illinois society. This rule is modified so that the selection of an alternative is also contingent on being able to measure all the social costs and benefits as well as avoiding unreasonable distribution problems. The long standing problem of being unable to reliably measure the value of human health benefits associated with environmental regulations in Illinois has not been adequately addressed by the Department. The effect of this failure is to trivialize the use of economic impact studies. Furthermore, the failure of the Department to use § 4(d) to avoid doing studies where measurement problems preclude a proper study exacerbates the trivalization of the studies.

The courts have begun to contribute to this problem. In *Citizens Utilities* the court began the process of mandating the consideration of an economic impact study even when the Board found the proper measurement of benefits impossible. This can only result in the Board going through the motions of reviewing such studies and drafting orders to prevent courts from remanding, rather than giving reasoned and serious consideration to the information contained in economic impact studies.

There remains the contradictory goals implicit in § 2(b) and § 27(b) of the IEPA. An approach that may remove this contradiction is implicit in Coase's theorem. Coase argues that both the polluter and the entity experiencing the pollution "cause" the externality. If there were no polluter, then there would be no externality. If there were no entity seeking to utilize the polluted resource, then there would be no external-

ity. Thus, according to Coase, both "cause" the externality.¹⁰⁰ This analysis would make the language of § 2(b) superfluous, because all affected individuals become the "cause" of the pollution problem. It is unlikely that that is the interpretation intended by the legislative drafters of § 2(b) of the IEPA.

Section 2(b) is more likely a statement of purpose that has been undercut by the gradual amendment of the statutes as they relate to economic impact studies. It seems probable that the original theory underlying the statement of purpose was the desire to equate private cost with social cost. Over time, as Coase's type of analysis increased in influence the amendments to the statutes were based more on the cost-benefit approach than on the private-cost/social-cost approach. It is a contradiction in the statutory provisions for environmental regulation in Illinois.

On the other hand, this inconsistency in the statute may be beneficial. For example, cases where a cost-benefit analysis indicates that significant pollution costs should be imposed on the general public would appear to be in conflict with § 2(b) of the IEPA. The tension this creates tends to increase the bargaining power of the general public in such situations. It increases the probability that a cost-benefit analysis that suggests imposing pollution costs on the general public will not prevail without, at least, a challenge under § 2(b) of the IEPA. Also, in cases in which no economic impact study can be properly done, § 2(b) creates a presumption that the costs of remedying the harm from pollution should be borne by the source of the pollution.

100. R. Coase, *The Problem of Social Cost*, 3 J. Law & Econ. 1, 13 (1960).

APPENDIX A
SUMMARY OF LETTERS OF NEGATIVE DECLARATION

DATE	DOC #	ILL. REV. STAT. CH 96½, PARA.	RATIONALE GIVEN
8/18/82	R82-11	*7404(d)(1) & (4)	(1) The Illinois Department of Transportation requested that its General Permit #6 be concurred with for a parallel shoreline protection permit by the Illinois Pollution Control Board. An economic impact study would not provide additional information and the Illinois Environmental Protection Agency, the Illinois Department of Conservation, and the Army Corps of Engineers have agreed to the proposal.
11/10/82	R81-29	*7404(d)(1)	(1) The variance requested would not result in higher sewage treatment for users of a regional treatment plant. (2) The regional treatment plant remains environmentally beneficial regardless of Pfizer's use or non-use. (3) The decision can be reversed without detrimental impact on the regional treatment plant. (4) The reduction of Pfizer flow at the East St. Louis plant will have a beneficial impact on operation of the plant through reduced hydraulic load.
2/14/83	R82-12	*7404(d)(1) & (4)	(1) There would be no impact because, with the exception of one city, no area has been or is in violation of the proposed standard. In addition the one violator is expected to be in compliance in the near future.
2/14/83	R82-5 R82-10	*7404(d)(1) & (4)	(1) The proposed rule changed procedures only, no substantive regulations were changed.

DATE	DOC #	ILL. REV. STAT. CH 96 ¹ / ₂ , PARA.	RATIONALE GIVEN
			(2) Administrative costs would be reduced by the new procedures.
5/31/83	R83-6	*7404(d)(4)	(1) The proposal was to extend an interim rule. Without the interim rule there would be significant substantive environmental harm. Also, the interim rule had been subject to an economic impact study in R76-7.
6/27/83	R82-31	*7404(d)(4)	(1) This docket is an extension of R76-14 within which an economic impact study has been conducted. That economic impact study is sufficient.
6/17/83	R83-9	*7404(d)(2)	(1) Administrative costs would be reduced by extending algicide permits from one year to five years. Current permits are renewed year by year with only repetitious refileing of the same material.
9/29/83	R83-5	*7404(d)(2) & (4)	(1) The issue of long range transport of air pollutants is too costly to consider in an economic impact study of the effect of increasing stack height to 94 feet and doubling the allowable sulfur dioxide emission limitation.
9/23/83	R83-11	*7404(d)(4)	(1) Doubling the average daily effluent of total suspended solids from a power plant (Illinois Power) into state waters can only be achieved with a \$3.9 million dollars investment with \$145,000 annual operating costs. This cost outweighs the associated benefits. (2) Increasing the maximum daily effluent from 30 mg/l to 100 mg/l would have impacts which are outside the scope of an economic impact study. The economic costs remain unknown.

DATE	DOC #	ILL. REV. STAT. CH 96 ¹ / ₂ , PARA.	RATIONALE GIVEN
11/23/83	R83-19	*7404(d)(4)	<p>(1) This is a request from Lockport for a variance in sewage treatment facility effluent limits. There is clearly identified \$1.7 million in capital expenditures and \$60,000 in recurring annual costs with no discernible benefit.</p> <p>(2) There is no current recreational use at the site and none is anticipated. In addition the site is not included in the plans for the national Heritage Corridor along the Illinois and Michigan Canal.</p>
12/20/83	R83-7	*7404(d)(4)	<p>(1) The past practice of the IEPA improperly measured noise levels from a General Motor's facility. Proposed regulations would correct this inaccuracy. The "unquantifiable benefit of having reliable data on noise emissions far outweighs the added manpower and other costs to the IEPA." costs</p> <ul style="list-style-type: none"> - new equipment needed benefits - accurate readings will reduce need for some compliance costs by showing some facilities in compliance; and - accurate readings will increase enforcement activity on those actually in violation
3/7/84	R83-35	*7404(d)(4)	<p>(1) A variance from noise standards was sought. The cost of compliance was estimated at \$235,000 (~1/2 the value of the business). The shop employed 50 people. The number of individuals who would be affected by the noise was minimal. Additional information would not contribute beyond existing record.</p>

DATE	DOC #	ILL. REV. STAT. CH 96 ¹ / ₂ , PARA.	RATIONALE GIVEN
4/19/84	R83-26	*7404(d)(4)	(1) The same analysis at R83-35 above was used for a noise variance. In this case there was an applicable economic impact study on the site from an earlier proceeding. Also there were no citizen complaints.
4/19/84	R83-29	*7404(d)(4)	(1) Same as R83-26.
4/19/84	R83-34	*7404(d)(4)	(1) Same as R83-26.
4/19/84	R83-30	*7404(d)(4)	(1) Same as R83-26.
4/19/84	R83-33	*7404(d)(4)	(1) Same as R83-26.
6/4/84	R83-36	*7404(d)(2)	(1) A correction was sought in the factual information used to promulgate regulations concerning volatile organic material emission for prime surface topcoat operations in Cook County automobile or light truck manufacturing plants. (Ford Motor Co.) Since the information was presumed correct from the USEPA in the first place, as a standard for RACT, then correcting the Illinois standard to reflect the new USEPA information has no detrimental environmental effect and positive economic effect on Ford.
7/9/84	R83-12	*7404(d)(3) & (4)	(1) The City of Shelbyville sought a variance for phosphorus emissions to Carlyle Reservoir. The benefits are impossible to calculate because of difficulty with estimating the flow rate of the phosphorus. The main reason for this is the distance from the reservoir to the City and various distance related factors which affect the flow rate over time.
9/24/84	R83-32	*7404(d)(4)	(1) Same as R83-26, except there is no site specific economic study from a past proceeding.
9/24/84	R83-25	*7404(d)(4)	(1) Same as R83-32.

DATE	DOC #	ILL. REV. STAT. CH 96½, PARA.	RATIONALE GIVEN
9/24/84	R83-31	*7404(d)(4)	(1) Same as R83-32.
11/27/84	R84-30	*7404(d)(4)	(1) East Peoria sought permission to discharge treated wastewater into a ditch which fed into the Illinois River rather than pumping directly into the River. Significant economic savings would be experienced by the City and the water quality of the water in the ditch would not be detrimentally affected. The area is commercial with no recreational use.
11/27/84	R84-4 R84-19	*7404(d)(4)	(1) The proceedings were to determine what algicides should be allowed in Illinois waters, only copper sulfate or all USEPA registered algicides. The use of USEPA registered algicides is assumed to be environmentally safe if proper procedures are used because of the "extensive" analysis done by the USEPA in its registration procedure. Thus no cost benefit analysis is necessary. (2) The effect of allowing all USEPA registered algicides is to increase competition and possibly lower prices and increased accessibility. The actual effect is too expensive to measure with cost-benefit study.

DATE	DOC #	ILL. REV. STAT. CH 96 1/2, PARA.	RATIONALE GIVEN
2/20/85	R84-16	*7404(d)(4)	(1) Mobile Oil sought a variance for ammonia nitrogen emissions. The record (solely from Mobile) showed significant costs (up to \$720,000 annually) while the benefit in the fishery is \$6,448 annually. The record does not reflect sufficient consideration of alternatives but a formal cost-benefit analysis is not the proper "context" for expanding the consideration of alternatives.
5/3/85	R84-46	*7404(d)(4)	(1) Central Illinois Public Service company sought site specific standards for emissions to groundwater from its flyash pond. Without specific reference the Director of the Department stated that the record contained sufficient cost benefit data for the Board to make a decision in this case. (2) The Department called for a rulemaking setting statewide groundwater standards as a proper resolution of future cases such as this.
5/7/85	R84-13	*7404(d)(4)	(1) Same as R84-16, only for Union Oil.
6/13/85	R84-45	*7404(d)(2)	(1) A variance from landfill ground cover regulations was sought. No explanation was given.

*Ill. Rev. Stat. ch. 96 1/2, para. 7404(d) reads in part:

The director [of the Department] may make a finding that an economic impact study is unnecessary in any of the following situations:

- (1) The regulation has no economic impact;
- (2) The net economic impact of the regulation is favorable and the costs of compliance are small or are borne entirely by the proponent of the regulation;
- (3) The economic impact of the regulation is so difficult to measure that a formal study would not generate useful information; or
- (4) The cost of making a formal study is economically unreasonable in relation to the value of the study to the Board [Illinois Pollution Control Board] in determining the adverse economic impact of the regulation.

