

AN INHERENT ROLE FOR COST-BENEFIT ANALYSIS IN JUDICIAL REVIEW OF AGENCY DECISIONS: A NEW PERSPECTIVE ON OSHA RULEMAKING

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I. INTRODUCTION

The proper role of cost-benefit analysis in health and environmental decisionmaking has been the source of a growing controversy during the past decade.¹ The debate has centered largely around the regulation of workplace health and safety hazards by the Occupational Safety and Health Administration (OSHA).² Since its establishment under the 1970 Occupational Safety and Health Act (the Act),³ OSHA has promulgated numerous regulations designed

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1. See, e.g., MacCarthy, *A Review of Some Normative and Conceptual Issues in Occupational Safety and Health*, 9 B.C. ENV'T'L AFF. L. REV. 773 (1982); Rodgers, *Benefits, Costs & Risks: Oversight of Health and Environmental Decisionmaking*, 4 HARV. ENV. L. REV. 191 (1980); Baram, *Cost-Benefit Analysis: An Inadequate Basis for Health, Safety and Environmental Regulation Decisionmaking*, 8 ECOLOGY L.Q. 473 (1980); J. Kasper, *Cost-Benefit Analysis in Environmental Decisionmaking*, 45 GEO. WASH. L. REV. 1013 (1977); Williams, *Benefit-Cost Analysis in Natural Resources Decisionmaking: An Economic and Legal Overview*, 11 NAT. RESOURCES J. 761 (1976).

2. The Occupational Safety and Health Act of 1970 (the Act), 29 U.S.C. §§ 651-678 (1976 & Supp. III 1979), authorizes the Secretary of Labor to establish workplace health and safety standards. *Id.* § 655. The Secretary of Labor established the Occupational Safety and Health Administration (OSHA) within the Department of Labor to promulgate and administer the standards. 36 Fed. Reg. 8754 (1971). The Secretary of Labor delegated his authority to promulgate standards to the Assistant Secretary of Labor for Occupational Safety and Health (the Secretary) who is the head of OSHA. 29 U.S.C. § 553. This article will refer to "OSHA," "the agency," and "the Secretary" interchangeably.

3. 29 U.S.C. §§ 651-678 (1976 & Supp. III 1979).

to reduce worker exposure to toxic substances.⁴ Industries faced with the large costs⁵ of complying with OSHA's toxic substance standards have repeatedly attacked the standards on the grounds that they are too expensive.⁶ These industries have contended that, before promulgating toxic substance standards, OSHA must take into account the economic efficiency of the proposed regulations under the criterion of cost-benefit analysis.

The controversy over whether particular economic considerations are proper under OSHA has revolved around a determination of congressional intent. Neither the Act nor its legislative history provides a clear understanding of that intent. Moreover, attempts by the judiciary to assess that intent have been hampered by a number of uncertainties. For example, OSHA is delegated broad policymaking authority under the Act to determine safe, though not necessarily risk-free, workplace exposure levels to hazardous substances.⁷ Yet, like many agencies regulating in the area of health and the environment, OSHA is forced to make policy determinations in the face of both scientifically and economically incomplete information. In OSHA's case, these gaps in knowledge concern the medical effects of toxic substances⁸ and the economic capability of industries to achieve limited exposure levels to such substances. These informa-

4. For a listing of the 24 new permanent health standards promulgated by OSHA during the 1970's, see Hollander, *Injunctions Against Occupational Hazards: Toward a Safe Workplace Environment*, 9 B.C. ENV'T'L AFF. L. REV. 133, 138 n.33 (1980). In addition, this past year OSHA has issued several Advance Notices of Proposed Rulemaking: one concerning ethylene dibromide, 46 Fed. Reg. 61,671 (1981); one concerning a reevaluation of the current standards for ethylene oxide, 47 Fed. Reg. 3566 (1982) (the present standard can be found at 29 C.F.R. § 1910.1000, Table Z-1 (1981)); and one concerning a reevaluation of OSHA's generic policy for the regulation of carcinogens, 47 Fed. Reg. 187 (1982). OSHA also recently issued a request for comments and information, and notice of informal public meetings, concerning the possible regulation of occupational exposure to pesticides during the manufacturing and formulating process. 45 Fed. Reg. 80,078 (1980).

5. For example, estimates of the total annual cost to the steel industry of OSHA's standard for coke oven emissions ranged from \$240 million to \$1.28 billion including capital, operating, and maintenance costs. *Am. Iron & Steel Inst. v. OSHA*, 577 F.2d 825, 836 (3d Cir. 1978), *cert. dismissed*, 448 U.S. 917 (1980). OSHA's benzene standard, as originally promulgated, would have cost that segment of the petroleum refining industry producing benzene \$24 million in capital costs and \$600,000 in first-year operating expenses. 43 Fed. Reg. 5936 (1978). The capital expense broke down to \$80,000 for each of the 300 covered employees.

6. For a listing of the outcome in the courts of the attacks on OSHA's toxic substance standards, see Note, *OSHA's Rulemaking Authority Under the Occupational Safety and Health Act: Marshall v. American Petroleum Institute*, 12 LOY. U. CHI. L.J. 229, 230 n.5 (1981). OSHA's standard for airborne lead recently was upheld in *United Steelworkers of Am. v. Marshall*, 647 F.2d 1189 (D.C. Cir. 1980), *cert. denied*, 453 U.S. 913 (1981).

7. See *Indus. Union Dep't, AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607, 641 (1980); Currie, *OSHA*, 1976 AM. B. FND. RESEARCH J. 1107, 1134.

8. See *infra* text and notes at notes 255-60.

tion gaps complicate OSHA's determinations of "safe" exposure levels to toxic substances and, therefore, complicate in turn a court's review of whether OSHA's determinations are based on a proper consideration of available economic and scientific data.

OSHA's regulatory posture has been obscured further by confusion surrounding the proper scope of judicial review of the agency's health and safety regulations. In section 6(f) of the Act, the substantial evidence test is set out as the standard for judicial review of OSHA's determinations.⁹ While courts normally use the substantial evidence test to review an agency's factual determinations, the Act directs courts to apply this test to a review of OSHA's legislative-like policy determinations.¹⁰ The courts therefore have had to strike an "uneasy partnership"¹¹ with OSHA: on one hand, the courts have expressed the need to provide effective review; on the other, the courts have recognized that judicial review under the substantial evidence test must be somewhat limited where OSHA's decisions are backed by the agency's broad authority to make policy.¹² In addition, courts have felt bound to defer to OSHA's superior expertise in complex scientific matters¹³ and to allow room for the agency's necessarily speculative predictions of technological development in the area of workplace health and safety controls.¹⁴

An additional factor which has complicated judicial assessment of whether cost-benefit analysis is an appropriate criterion under the Act is confusion over the meaning of the term "cost-benefit analysis" itself. The term has been used to encompass a range of exercises from a formal, highly quantified economic analysis to a broad, common sense balancing that is simply indicative of any rational utility-based decisionmaking.¹⁵ The uncertainty about cost-benefit analysis under OSHA is, therefore, threefold: to what extent must economic considerations enter into the agency's regulatory decisions; what standard of review should the courts use to evaluate

9. 29 U.S.C. § 655(f) (1976).

10. See *infra* text at notes 239-49.

11. See *Assoc. Ind. of N.Y. v. United States Dep't of Labor*, 487 F.2d 342, 354 (2d Cir. 1973); *Indus. Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d 467, 469 (D.C. Cir. 1974). See also Leventhal, *Environmental Decisionmaking and the Role of the Courts*, 122 U. PA. L. REV. 509 (1974).

12. *Hodgson*, 499 F.2d at 475. See *infra* text and notes at notes 250-54.

13. *Soc. of Plastics Ind. v. OSHA*, 509 F.2d 1301, 1308 (2d Cir.), *cert. denied*, 421 U.S. 992 (1975).

14. *United Steelworkers of Am. v. Marshall*, 647 F.2d 1189, 1206 (D.C. Cir. 1981).

15. See *infra* text and notes at notes 42-51.

OSHA's economic considerations; and what type of cost-benefit analysis, if any, is appropriate.

Amid this confusion, industries attacking the validity of OSHA's toxic substance standards have pointed to section 6(b)(5) of the Act as mandating cost-benefit analysis. Section 6(b)(5) requires OSHA's toxic substance standards to be "feasible."¹⁶ The industry forces have argued that a determination of feasibility is impossible without cost-benefit analysis. During the past decade reviewing courts, mindful of the complex subject matter, the difficult nature of their role, and the overriding concern for worker health and safety mandated by the Act, generally upheld OSHA's standards against the industries' challenges.¹⁷

The extensive litigation over cost-benefit analysis was recently resolved in part by the United States Supreme Court. In *American Textile Manufacturers Institute v. Donovan (ATMI)*,¹⁸ the Supreme Court held that, for the limited category of toxic substances, OSHA is neither required nor permitted to use cost-benefit analysis as a criterion for determining worker exposure limits to those hazards. *ATMI* involved a textile industry challenge to the cotton dust standard¹⁹ promulgated by OSHA in 1978. The Court upheld the standard, even though OSHA had not made a showing that the regulations were justified on a cost-benefit basis.²⁰

The *ATMI* holding constitutes the second element of a two-part test which now governs OSHA's ability to regulate toxic substances. In *Industrial Union Department, AFL-CIO v. American Petroleum Institute (Industrial Union)*,²¹ decided the previous term, the Supreme Court held that, as a threshold matter, OSHA must show that a "significant risk" of health impairment exists before it may regulate a workplace hazard at all.²² Once the significant risk threshold is satisfied, the *ATMI* decision then governs OSHA's ability to regulate toxic substances. While *ATMI* precludes the use of cost-benefit analysis to determine if a toxic substance standard is feasible, it does place limits, though minimal ones, on OSHA's ability to regulate by declaring infeasible those standards which are either

16. 29 U.S.C. § 655(b)(5) (1976).

17. See *supra* note 6.

18. 452 U.S. 490 (1981). This case is commonly referred to as the Cotton Dust Case.

19. 29 C.F.R. § 1910.1043 (1981). OSHA's cotton dust standard was designed to reduce the incidence of byssinosis, a disease caused primarily by the inhalation of cotton dust. Byssinosis is prevalent among workers in the cotton industry. See *infra* text and notes at notes 99-125.

20. 452 U.S. 490, 541.

21. 448 U.S. 607 (1980). This case is commonly referred to as the Benzene Case.

22. *Id.* at 641-42. See *infra* text and notes at notes 85-97.

economically or technologically unachievable by the regulated industry.²³

In prohibiting OSHA's use of cost-benefit analysis for toxic substance regulation, the Supreme Court was troubled by the different meanings assigned by the parties to the term "cost-benefit analysis." The Court failed to distinguish between these meanings while deciding that cost-benefit analysis is prohibited under section 6(b)(5).²⁴ In doing so, the Court overlooked what this article suggests has been an inherent role for the broad, nonmonetized form of cost-benefit analysis in judicial review of agency decisions. The purpose of this article is to examine this apparently inherent role in the context of the Supreme Court's recent pair of decisions affecting OSHA rulemaking.

To provide background to the controversy concerning cost-benefit analysis under OSHA, Part II of this article describes the Occupational Safety and Health Act and then describes the confusion over the various meanings given to the term "cost-benefit analysis." The section then summarizes circuit court opinions, prior to *Industrial Union*, construing the decisionmaking methods required by the Act. Part III briefly reviews the Supreme Court's opinion in *Industrial Union* and then turns to a detailed look at the *ATMI* decision. This section describes the *ATMI* Court's construction of the interaction between sections 6(b)(5) and 3(8) of the Act, the two provisions which combine to limit OSHA's authority to regulate toxic substances. In addition, because the narrow holding of *ATMI* applies only to OSHA's toxic substance standards, this section describes the implications of that decision for other types of OSHA regulations, such as those governing general workplace safety. Part IV of this article turns to a discussion of the inherent role for cost-benefit analysis in judicial review of agency decisions. This section examines a series of representative cases which reveals that, regardless of the lack of any express congressional mandate, a broad form of cost-benefit analysis has been invoked quite often by courts when reviewing the policy decisions of OSHA and other policymaking agencies. This section then reexamines the *Industrial Union* and *ATMI* decisions in light of this observation to determine what form of cost-benefit analysis, if any, remains valid under the Occupational Safety and Health Act. The article concludes, first, that the *ATMI* Court properly construed the Act to prohibit OSHA from using a strictly monetized form of

23. See *infra* text and notes at notes 139-58.

24. See *infra* note 212.

cost-benefit analysis in the setting of toxic substance exposure levels. Second, the article concludes that despite this prohibition, there appears to be a need for at least some consideration by OSHA of the financial costs of health and safety standards; this should occur as part of a broad, nonmonetized cost-benefit analysis to be used by OSHA in its promulgation of health and safety regulations.

II. HISTORY OF COST-BENEFIT ANALYSIS UNDER OSHA

A. *The Occupational Safety and Health Act: Background*

The Occupational Safety and Health Act of 1970²⁵ was enacted to relieve the "ever-increasing human misery and economic loss" caused by work-related injuries and illnesses.²⁶ Congress recognized that technological advances in American industrial processes were causing workplace health and safety problems of unprecedented volume and complexity.²⁷ The mandate of the Act is to "assure so far as possible . . . safe and healthful working conditions" for every American worker.²⁸ To achieve this goal, the Act authorizes OSHA²⁹ to adopt or modify existing health and safety standards³⁰ and to pro-

25. 29 U.S.C. §§ 651-678 (1976 & Supp. III 1979).

26. S. REP. NO. 1282, 91st Cong., 2d Sess. 1, reprinted in [1970] U.S. CODE CONG. & AD. NEWS at 5177 [hereinafter cited as S. REP. NO. 1282].

27. *Id.* at 5178.

[T]echnological advances and new processes in American industry have brought numerous new hazards to the workplace. Carcinogenic chemicals, lasers, ultrasonic energy, beryllium metal, epoxy resins, pesticides, among others, all present incipient threats to the health of workers. Indeed, new materials and processes are being introduced into industry at a much faster rate than the present meager resources of occupational health can keep up with. It is estimated that every 20 minutes a new and potentially toxic chemical is introduced into industry. New processes and new sources of energy present occupational and health problems of unprecedented complexity.

S. REP. NO. 1282, *supra* note 26, U.S. CODE CONG. & AD. NEWS at 5178.

28. 29 U.S.C. § 651(b) (1976). Worker health is "the overriding concern of OSHA." *Indus. Union Dep't v. Hodgson*, 499 F.2d 467, 475 (D.C. Cir. 1974).

29. *See supra* note 2.

30. The federal and state governments had established relatively few occupational safety and health standards prior to 1970. *See* The Job Safety and Health Act of 1970, (BNA) OPERATIONS MANUAL 13-20, 24-32 (1971) [hereinafter JOB ACT MANUAL]. Most states did have some kind of occupational safety and health law by 1970, and most regulated mining; yet, no comprehensive national scheme existed. *Id.* at 15. The federal government first got significantly involved in this field in 1936 when Congress passed the Walsh-Healy Act, Pub. L. No. 74-846, 881, 49 Stat. 2036 (1936). This Act set safety and health standards only for workers engaged in government contract work and regulated such workplace hazards as radiation exposure, noise, gas, vapors, dusts, and hazardous chemicals. JOB ACT MANUAL, *supra* this note, at 25. The Walsh-Healy Act plus several other narrowly drawn federal statutes combined to protect at least 25 million workers prior to the passage of the Occupational Safety and Health Act, 29 U.S.C. §§ 651-678 (1976). JOB ACT MANUAL, *supra* this note, at 24. Despite this limited federal presence, a need for comprehensive legislation became well documented by the late 1960's. *Id.* at 13. For example, a 1967 Surgeon General's report concluded that 65 percent of the workers

mulgate new standards in areas where none exist.³¹

Congress intended this legislation to be a comprehensive scheme designed to protect as many workers as possible. The Act requires all employers engaged in interstate commerce³² to comply with OSHA's

in 1700 industrial plants were exposed to harmful physical agents, yet only 25 percent of these workers were adequately protected. *Id.* at 13. Not only were known dangers such as lead and mercury poisoning going unchecked, *id.* at 13-14, but also new dangers were being introduced into the workplace at an alarming rate. *See supra* note 27.

Section 4(b)(2) of the Act, 29 U.S.C. § 653(b)(2) (1976), required all standards promulgated for specific industries under the then existing amalgam of federal laws to be adopted automatically by the Secretary as occupational safety and health standards. In addition, section 6(a), 29 U.S.C. § 655(a), required the Secretary to adopt, within a two year period after the Act became effective, both national consensus standards and established federal standards. Section 3(9), 29 U.S.C. § 652(9), defines a national consensus standard as any standard adopted by a nationally recognized standards-producing organization. Section 3(10), 29 U.S.C. § 652(10), defines an established federal standard as any occupational safety and health standard in existence after the date of the Act's passage which had been established by a federal agency.

31. In addition to adopting the pre-1970 standards, the Act authorizes the Secretary to promulgate new permanent standards through an informal "notice and comment" rulemaking procedure. *Id.* § 6(b), 29 U.S.C. § 655(b) (1976). The procedure is initiated when the Secretary determines that a rule should be promulgated in order to ensure a safe and healthful workplace. *Id.* § 6(b)(1), 29 U.S.C. § 655(b)(1). The Secretary's determination must be made on the basis of information submitted to him in writing by interested persons, employers or employees, nationally recognized standards-producing organizations, the Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH), a state or political subdivision, or on his own information. *Id.* NIOSH, housed in the Department of Health and Human Services, was established under § 671 of the Act as a research arm serving OSHA. Pub. L. 91-596 § 22, 84 Stat. 1612 (1970) (codified at 29 U.S.C. § 671 (1976)).

After preliminarily determining the proper level for the OSHA standard, the Secretary then publishes the proposed rule in the Federal Register. *Id.* § 6(b)(2), 29 U.S.C. § 655(b)(2). Interested persons are given thirty days after publication to submit written comments, or objections, *id.* at § 6(b)(3), and to request a hearing. *Id.* Within 60 days after publication the Secretary must publish in the Federal Register a notice which both specifies the standards which have been objected to, and sets a time and place for a hearing on these objections. *Id.* Within 60 days after the hearing, the Secretary must set the level for the final OSHA standard. *Id.* at § 6(b)(4).

Section 6(c), 29 U.S.C. § 655(c), allows the Secretary also to promulgate emergency temporary standards, which take immediate effect upon publication in the Federal Register of the following determinations:

- (a) that employees are exposed to grave danger from exposure to substances or agents determined to be toxic or physically harmful or from new hazards, and
- (b) that such emergency standard is necessary to protect employees from such danger.

Id. This procedure allows the Secretary to forego the lengthy rulemaking procedure involved in establishing permanent standards. On publication of the section 6(c) emergency temporary standard, however, the Secretary must also commence proceedings to establish the standard as a permanent one under section 6(b).

32. 29 U.S.C. § 652(5) (1976). The term "employer" does not include the federal or state governments. *Id.*

standards.³³ Where hazards are not covered by a specific standard, OSHA may enforce workplace safety through a provision in the Act imposing on employers a general duty to provide workplaces free from material and foreseeable health hazards.³⁴ The combined effect of these provisions is to provide a measure of health and safety protection to virtually all American workers.³⁵

While OSHA's authority to set exposure levels for workplace health hazards is discretionary, there are two provisions in the Act which arguably limit OSHA's ability to make those levels as stringent as it wishes. The first limitation is contained in section 3(8), which is part of the definitional section of the Act. Section 3(8) defines an occupational safety and health standard as "a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, *reasonably necessary or appropriate* to provide safe or healthful employment and places of employment."³⁶ Regulated industries have asserted that stringent OSHA standards are not "reasonably necessary or appropriate" to protect employee health or safety, and therefore are not sanctioned by the Act.³⁷

The second limitation is contained in section 6(b)(5)³⁸ of the Act, which defines OSHA's power to regulate toxic substances:³⁹

The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, *to the extent feasible*, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working

33. *Id.* § 654(a)(2).

34. *Id.* § 654(a)(1). This provision requires each employer to "furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees." *Id.*

35. The present Assistant Secretary of Labor for Occupational Safety and Health, Thorne Auchter, estimates that OSHA's coverage extends to roughly 5 million workplaces and 70 million employees. Interview with Thorne Auchter, O.S.H. REP. (BNA) 1444, 1445 (April 16, 1981).

36. 29 U.S.C. § 652(8) (1976) (emphasis added). This article sometimes will refer to this provision of this section as the "reasonably necessary" requirement.

37. *See, e.g.*, *Am. Petroleum Inst. v. OSHA*, 581 F.2d 493 (5th Cir. 1978), *aff'd on other grounds sub nom.*, *Indus. Union Dep't v. Am. Petroleum Inst.*, 448 U.S. 607 (1980).

38. 29 U.S.C. § 655(b)(5) (1976).

39. Section 6(b)(5), which concerns the regulation of toxic substances or harmful physical agents, is a sub-section of section 6(b), which establishes the procedures for promulgation, modification, or revocation of all permanent OSHA standards. Section 6(b)(5) is the only sub-section in section 6(b) to set special rules for a particular category of health or safety hazard. *See* 29 U.S.C. § 655(b) (1976).

life In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be . . . the feasibility of the standards.⁴⁰

Regulated industries have contended that stringent OSHA toxic substance standards violate section 6(b)(5) as well as section 3(8) because the standards are not "feasible" with respect to the economic costs and technological requirements they impose.⁴¹

The term "cost-benefit analysis" does not appear in either of these sections or anywhere else in the Act. Despite this omission, a broad reading of these two sections by OSHA's challengers has led to the assertion that cost-benefit analysis may be inferred as a limitation on OSHA's power to regulate toxic substances. During the 1970's, a number of federal courts of appeals were called on to construe sections 6(b)(5) and 3(8) and to determine whether those provisions require some form of cost-benefit analysis by the Secretary of OSHA in promulgating toxic substance standards. Before this article details the circuit courts' and the Supreme Court's interpretations of the relationship between section 6(b)(5), section 3(8), and cost-benefit analysis, the following section will first highlight the confusion over how the term "cost-benefit analysis" is defined.

B. Cost-Benefit Analysis

Compounding the courts' problem over the role of cost-benefit analysis under OSHA has been a disagreement among policy analysts over the exact meaning of the term "cost-benefit analysis." In general, cost-benefit analysis involves "[a]n attempt to delineate and compare in terms of society as a whole the significant effects, both positive and negative, of a specific action."⁴² Some commentators argue that the term applies only to a formal economic exercise in which all costs and benefits of alternative policies are quantified in

40. *Id.* § 655(b)(5) (emphasis added). This article sometimes will refer to the section 6(b)(5) language as the "feasibility" requirement. Also, this article will refer to "health" and "toxic substance" standards interchangeably as any standards promulgated by OSHA under section 6(b)(5). The legislative history of the Act indicates that Congress was concerned in this section with the special problems of toxic substances. These problems chiefly are (1) the latency period between exposure and appearance of symptoms, and (2) the general uncertainty of medical knowledge concerning the full danger associated with exposure.

41. *See, e.g.,* *Indus. Union Dep't v. Hodgson*, 499 F.2d 467 (D.C. Cir. 1974).

42. W. ROWE, *AN ANATOMY OF RISK* 457 (1977). "Generally a number of alternative actions are analyzed, resulting in the selection of the alternative that provides either the largest benefit-cost ratio (total benefit/total cost) or one with a positive ratio at least. If an alternative results in a net benefit less than zero or a benefit-cost ratio less than 1, it is deemed socially inefficient and is not carried out." *Id.*

a single unit of measurement, usually dollars.⁴³ Under this approach, analysts may easily compare costs and benefits and select the alternative that produces the greatest net economic benefit.⁴⁴ The underlying rationale of this form of cost-benefit analysis is economic efficiency, or the utility-based notion of maximizing the value to be derived from a finite amount of resources.⁴⁵

Others have defined cost-benefit analysis more broadly as a method for comparing the costs and benefits of alternative actions even where they may not all be readily quantifiable in dollars.⁴⁶ Because this balancing process involves a consideration of both monetizable and nonmonetizable values such as human health or ecological damage, this article will use the term "integrative" cost-benefit analysis to describe this second approach. Unlike monetized cost-benefit analysis, integrative cost-benefit analysis does not attempt to reduce a decision to a simple formula by converting all costs and benefits to identical units. Instead, integrative analysis requires costs and benefits to be identified and quantified only to the extent possible before being balanced against each other.⁴⁷ Such an analysis relies on a theory that the concept of balancing costs and benefits applies with equal validity to all policy decisions, not just those encompassing solely economic values assigned by the marketplace.⁴⁸

Integrative cost-benefit analysis necessitates a balancing procedure which is at least partially subjective and, therefore, less

43. See, e.g., Baram, *supra* note 1, at 477-78; A. HINRICHS, GOVERNMENT DECISION MAKING AND THE THEORY OF BENEFIT-COST ANALYSIS: A PRIMER IN PROGRAM BUDGETING AND BENEFIT-COST ANALYSIS 9 (1969).

44. While examination of which alternative produces the largest benefit/cost ratio may sometimes lead to the same choice, often it will be misleading. In E. STOKEY & R. ZECKHAUSER, A PRIMER FOR POLICY ANALYSIS 146 (1978), the following example is offered:

| Project | Benefits | Costs | Net Benefits | Benefit/ Cost Ratio |
|---------|-----------|----------|-----------------|---------------------------|
| I | \$10,000 | \$1,000 | \$9,000 | 10.0 |
| II | \$100,000 | \$25,000 | \$75,000 | 4.0 |

Id. While Project I offers the largest benefit/cost ratio, the economically correct choice is Project II, which maximizes net benefits.

45. *Id.* at 134. "Benefit-cost analysis is *ex ante*; it attempts to evaluate a project before it is undertaken to decide in what form and at what scale it should be undertaken, and indeed whether it should be undertaken at all." *Id.*

46. See generally Kasper, *supra* note 1, at 1014; Green, *Cost-Risk Benefit Assessment and the Law: Introduction and Perspective*, 45 GEO. WASH. L. REV. 901 (1977).

47. Comment, *The Significant Risk Requirement in OSHA Regulation of Carcinogens*: Industrial Union Department: AFL-CIO v. American Petroleum Institute, 33 STAN. L. REV. 551, 555 n.25 (1981) [hereinafter cited as *Significant Risk Requirement*].

48. One type of integrative cost-benefit analysis that is familiar to most lawyers is the qualitative balancing, introduced by Judge Learned Hand, that has emerged as the test for

precise than a strictly monetized cost-benefit analysis. An integrative cost-benefit analysis does, however, attempt to account for the range of noneconomic social values which do not fit into a fully monetized cost-benefit analysis and, consequently, are often ignored. In the area of health and environmental decisionmaking, some commentators have argued that cost-benefit analysis should not be relied upon because of the impossibility of objectively monetizing human health⁴⁹ and environmental values. In contrast, others have argued that, while this may be true of monetized cost-benefit analysis, integrative cost-benefit analysis nevertheless may be a useful method to improve decisionmaking.⁵⁰ They contend that, although detailed quantification of costs and benefits may be impossible, integrative cost-benefit analysis might nevertheless be a useful tool to force policy makers "to think hard about categories of benefits and costs, to define their expectations about outputs, and to pay attention to the tradeoffs that are implicit in their decision."⁵¹ Integrative cost-benefit analysis, then, is more useful as a foundation for organized decisionmaking than as a final determinative calculation.

Against this background of disagreement over the definition of cost-benefit analysis, the courts considered the proper role for

reasonableness under tort law. This reasonableness test involves a balancing of the expected benefits of an action against the gravity of the possible harm multiplied by the probability of the harm's occurrence. See RESTATEMENT (SECOND) OF TORTS § 283 comment e (1965); W. PROSSER, *THE LAW OF TORTS* § 31 (4th ed. 1971). The Hand Formula has also been recognized in legislation. See *infra* text and note at note 149.

49. Putting a dollar value on human life is a concept most people find repugnant. See Zimmerman, *Risk-Benefit Analysis: The Cop-Out of Government Regulation*, 14 TRIAL 43, 45 (Feb. 1978). Many commentators have noted the inherent difficulties of valuing human life; see Baram, *supra* note 1, at 483-86; Kelman, *Cost-Benefit Analysis: An Ethical Critique*, REGULATION 33 (Jan./Feb. 1981); Green, *The Risk-Benefit Calculus in Safety Determinations*, 43 GEO. WASH. L. REV. 791, 798 n.26 (1975); Berger & Riskin, *Economic and Technological Feasibility in Regulating Toxic Substances Under the Occupational Safety and Health Act*, 7 ECOLOGY L.Q. 285, 287 (1978); Note, *Cost-Benefit Analysis for Standards Regulating Toxic Substances Under the Occupational Safety and Health Act: American Petroleum Institute v. OSHA*, 60 B.U.L. REV. 115, 140 n.142 (1978) [hereinafter cited as *Regulating Toxic Substances*]. See also AFL-CIO v. Marshall, 617 F.2d 636, 665 n.170-71 (D.C. Cir. 1979). As noted by Baram, however, several agencies today do in fact assign a dollar value to human life; among them are the Nuclear Regulatory Commission, the Environmental Protection Agency, and the Consumer Product Safety Commission. Baram, *supra* note 1, at 485.

50. See, e.g., NATIONAL ACADEMY OF SCIENCES, *DECISION MAKING FOR REGULATING CHEMICALS IN THE ENVIRONMENT* 40 (1975), cited in Baram, *supra* note 1, at 475 n.2 [hereinafter cited as *NAS REPORT*].

51. STOKEY & ZECKHAUSER, *supra* note 44, at 135. The National Academy of Sciences has also endorsed the use of integrative cost-benefit analysis as a decisionmaking tool, stating that cost-benefit analysis "is not a rule or formula which would make the decision or predetermine the choice for the decisionmaker. Rather, it . . . is a framework and a set of procedures to help

economic considerations in OSHA's toxic substance regulations. This issue ultimately required Supreme Court resolution because of a split of opinions that it generated in the circuit courts during the 1970's. This article now turns to a discussion of the lower courts' interpretations during that period of the Act's requirements.

*C. Circuit Court Treatment of Cost-Benefit Analysis
and OSHA Regulations*

1. Application Under the Section 6(b)(5) Feasibility Test

The term "feasible" as used in section 6(b)(5) has generally been construed to encompass both economic feasibility and technological feasibility.⁵² The standard for economic feasibility was first set out in 1974 by the District of Columbia Court of Appeals on review of OSHA's standard for asbestos dust. In *Industrial Union Department, AFL-CIO v. Hodgson*,⁵³ the court held that a toxic substance standard should be deemed economically feasible as long as the compliance costs it imposes upon an industry are not so great as to threaten the very existence of the industry. Noting that under the Act's mandate OSHA must give primary consideration to employee health,⁵⁴ the court determined that OSHA is allowed essentially free reign to impose costly regulations. To limit this power, the court found, Congress inserted the feasibility requirement, but only to prevent OSHA from effectively causing the financial destruction of an entire industry. The *Hodgson* court concluded that "Congress does not appear to have intended to protect employees by putting their employers out of business . . . by making financial viability impossible."⁵⁵ Furthermore, the court emphasized that this threshold level for financial costs applies to an industry as a whole rather than to individual employers; that is, a standard entailing compliance costs

organize the available information, display trade-offs, and point out uncertainties. . . ." NAS REPORT, *supra* note 50, at 39, *quoted in* Baram, *supra* note 1, at 478 n.15.

52. See, e.g., *Indus. Union Dep't v. Hodgson*, 499 F.2d 467 (D.C. Cir. 1974); *Am. Iron & Steel Inst. v. OSHA*, 577 F.2d 825 (3d Cir. 1978). Justice Rehnquist was the lone Supreme Court Justice to challenge this interpretation. To support his view that the feasibility criterion does not provide meaningful guidance to OSHA, Justice Rehnquist stated in his dissent in *ATMI* that "there is nothing in the words of § 6(b)(5), or their legislative history, to suggest why they should be [limited to mean 'technological and economic feasibility']". One wonders why the 'requirement' of § 6(b)(5) could not include considerations of administrative or even political feasibility." 452 U.S. 490, 546. For additional information on feasibility under OSHA between 1970-1978, see generally Berger & Riskin, *supra* note 49.

53. 499 F.2d 467, 477-78 (D.C. Cir. 1974).

54. *Id.* at 475.

55. *Id.* at 478.

which force some individual employers out of business would nevertheless be economically feasible as long as the industry as a whole would survive.⁵⁶

Under *Hodgson*, then, the determination of a standard's economic feasibility focused solely on the standard's financial effects on the regulated industry. The *Hodgson* method of determining economic feasibility did not require the justification of a standard's financial costs by a comparison to the standard's health benefits. The court therefore ruled out any form of cost-benefit analysis as a requirement for the determination of a standard's economic feasibility. The *Hodgson* ruling subsequently became the generally accepted interpretation of economic feasibility among the circuit courts.⁵⁷

Consistent with this approach towards economic feasibility, the circuit courts took a view of technological feasibility which similarly placed minimal limits on the Secretary's broad power to regulate.

56. As the court explained in *Hodgson*:

Standards may be economically feasible even though, from the standpoint of employers, they are financially burdensome and affect profit margins adversely. Nor does the concept of economic feasibility necessarily guarantee the continued existence of individual employers. It would appear to be consistent with the purposes of the Act to envisage the economic demise of an employer who has lagged behind the rest of the industry in protecting the health and safety of employees and is consequently financially unable to comply with new standards as quickly as other employers. As the effect becomes more widespread within an industry, the problem of economic feasibility becomes more pressing.

499 F.2d at 478.

57. The term "feasibility" has also been used by OSHA *within* its standards as a limitation on an employer's ability to choose between alternative methods of achieving a *given* health or safety goal. The appropriateness of the *method* of achieving a given health or safety objective is at issue in these cases rather than the appropriateness of the objective itself. Here, therefore, courts have construed the term "feasibility" leniently with respect to employers, and imposed on OSHA the requirement of justifying by cost-benefit analysis its decision that an employer has unjustifiably foregone a feasible and preferred method of achieving a specified health or safety goal. *RMI Co. v. Sec'y of Labor*, 594 F.2d 566, 572 (6th Cir. 1979). See *Turner Co. v. Sec'y of Labor*, 561 F.2d 82, 86 (7th Cir. 1977) (remand for failure to consistently apply cost-benefit analysis). "It is entirely rational to give little consideration to cost in defining the extent to which workers are to be protected, but to make cost a significant factor in choosing among alternative means of providing that protection. That the term 'feasibility' has developed two meanings depending on its context is unfortunate. . . ." *Regulating Toxic Substances*, *supra* note 49, at 125 n.63. For a fuller discussion of the two meanings of feasibility under OSHA, see *id.* at 124-26 n.63.

An example of the confusion generated by the concept of economic feasibility appears in the *RMI* court's incorrect characterization of the opinions from the Third and District of Columbia Circuits as standing for the proposition that the Secretary must perform a cost-benefit analysis when promulgating a toxic substance regulation. *RMI*, 594 F.2d 566, 571-72. The *RMI* court failed to realize that while these cases held that economic costs should be considered, they did not hold that the appropriateness of health benefits should at any time be judged by a comparison to financial costs. See *infra* note 159.

The circuit courts interpreted technological feasibility to mean technological achievability, and resolved doubts over that achievability in favor of OSHA's findings that particular regulated industries possessed sufficient technology to enable them to comply with the OSHA standards.⁵⁸ This view is exemplified in *Society of Plastics Industry, Inc. v. OSHA*⁵⁹ in which OSHA's section 6(b)(5) permanent standard for vinyl chloride was challenged. In that case, the vinyl chloride industry had denied its technological ability to achieve both the permissible exposure level and the engineering control⁶⁰ requirements of the OSHA standard. The *Society of Plastics* court, following *Hodgson's* lead, decided that where "the ultimate facts . . . in dispute are 'on the frontiers of scientific knowledge' . . . [u]nder the command of [the Act], it remains the duty of [OSHA] to protect the workingman, and to act even in circumstances where existing methodology or research is deficient."⁶¹ In this highly uncertain area, the court felt that possible engineering changes would provide a degree of improvement impossible to predict until the changes were actually implemented.⁶² Therefore, the court rejected the industrial petitioners' contention that the standards were not technologically achievable, stating that the petitioners "simply need[ed] more faith in their own technological potentialities."⁶³

Following the *Society of Plastics* holding, several courts have since allowed OSHA to place a large technological burden on industry by holding that if the necessary technology does not presently exist but "looms on the horizon," then the Secretary is not justified in dismissing a proposed standard which includes such technology.⁶⁴ Relying

58. See, e.g., *Soc. of Plastics Ind. v. OSHA*, 509 F.2d 1301, 1309-10 (2d Cir. 1975); *AFL-CIO v. Brennan*, 530 F.2d 109, 121 (3d Cir. 1975); *Am. Iron & Steel Inst. v. OSHA*, 577 F.2d 825, 838 (3d Cir. 1978).

59. 509 F.2d 1301 (2d Cir. 1975).

60. Engineering controls, along with work-practice controls, are known as source controls. *Berger & Riskin*, *supra* note 49, at 290 n.16. Their purpose is to prevent hazardous substances from reaching the employee. Engineering controls focus on controlling technology to produce lower amounts of a hazardous substance, while work-practice controls focus on containing the hazardous substance manually by requiring, for instance, more frequent sweeping. OSHA may also require personal protective equipment, such as respirators or earplugs, which focuses on isolating the worker from the hazardous substances in the worker's immediate environment. *Id.*

61. 509 F.2d 1301, 1308.

62. *Id.* at 1309.

63. *Id.*

64. *AFL-CIO v. Brennan*, 530 F.2d 109, 121 (3d Cir. 1975); *Am. Iron & Steel Inst. v. OSHA*, 577 F.2d 825, 838 (3d Cir. 1978). *But see Indus. Union Dep't v. Hodgson*, 499 F.2d 467, 478 (D.C. Cir. 1974) ("Congress does not appear to have intended to protect employees by putting their employers out of business . . . by requiring protective devices unavailable under *existing* technology . . .") (emphasis added). See also *NRDC v. EPA*, 489 F.2d 390, 401 (5th Cir. 1974)

on the Act's general overriding concern to protect the worker, as well as on specific forward-looking language in section 6(b)(5) itself,⁶⁵ the circuit courts held that OSHA must consider not only existing technological capabilities but also imminent advances in the art.⁶⁶ These courts therefore have classified the Act as a technology-forcing statute.⁶⁷

By construing technological feasibility quite broadly, the circuit courts imposed a direct requirement upon OSHA to set toxic substance standards as stringent as technologically achievable by the regulated industry. The courts did not make the Act's mandate quite as clear, however, with respect to the economic feasibility of OSHA's toxic substance regulations. The industry ruination threshold had been set by the courts as the *limit* on the magnitude of expenditures that OSHA could compel of an industry. While OSHA agreed with the circuit courts' general conclusion that Congress intended worker health to be heavily favored over the economic burdens of compliance,⁶⁸ the agency did not consider it to be its duty to promulgate standards that would push industries to their financial limits.⁶⁹ Instead, the agency viewed the industry ruination threshold simply as an outer limit. OSHA retained the position that it would engage in integrative cost-benefit analysis in appropriate cases to assess the economic feasibility of a standard.⁷⁰

(construing Clean Air Act Amendments of 1970); *Chrysler Corp. v. Dep't of Transp.*, 472 F.2d 659, 674 (6th Cir. 1972) (construing Automobile Safety Act of 1966). The *American Iron* court, while upholding this basic interpretation of technological feasibility, struck down a provision in OSHA's coke oven emissions standard that required each employer unable to meet the permissible exposure level with existing technology to research and develop new technology on its own. 577 F.2d 825, 838.

65. In *Am. Iron & Steel Inst. v. OSHA*, the court noted that section 6(b)(5) of the Act grants authority to the Secretary to promulgate toxic substance standards "based upon research, demonstrations, experiments, and other information as may be appropriate." 577 F.2d 825, 838 (3d Cir. 1978), *citing* 29 U.S.C. § 655(b)(5).

66. *AFL-CIO v. Brennan*, 530 F.2d 109, 122 (3d Cir. 1975).

67. *Id.* at 121; *United Steelworkers of Am. v. Marshall*, 647 F.2d 1189, 1264 (D.C. Cir. 1980). OSHA is not the only agency that has been given a technology-forcing mandate by Congress. Examples of other federal statutes using technology-forcing schemes include the National Traffic & Motor Vehicle Safety Act of 1966, 15 U.S.C. §§ 1381, 1391-1409, 1421-1425; 23 U.S.C. § 313 note (1966), *see Pac. Legal Found. v. Dep't of Transp.*, 593 F.2d 1338, 1344 (D.C. Cir.), *cert. denied*, 444 U.S. 830 (1979), and the Clean Air Act Amendments of 1970, 42 U.S.C. §§ 7401-7402 (1970), *see NRDC v. EPA*, 489 F.2d 390, 401 (5th Cir. 1974).

68. *See* 43 Fed. Reg. 27,378 (1978).

69. In its cotton dust standard, OSHA stated that it had "no desire to be punitive or to impose on industry all that it could afford; OSHA's goal is to protect worker health and to determine the technological and economic feasibility of the measures required to effect that purpose." 43 Fed. Reg. 27,379 (1978).

70. In promulgating its standard for coke oven emissions, OSHA stated that although it considered a monetized cost-benefit analysis impossible to perform, it nevertheless had carefully

In keeping with its perceived mandate to promulgate feasible toxic substance standards, OSHA in 1977 proposed a generic approach to the regulation of occupational carcinogens under section 6(b)(5).⁷¹ Because no "safe" level of exposure to occupational carcinogens was yet determinable, the adopted method required the Secretary to set the permissible exposure level as close as feasible to the only known safe level, 0 parts per million (ppm).⁷² The Secretary's approach was to require elimination of all risk, limited only by the constraints of economic and technological achievability in the industry. The method therefore did not require any estimation of the risks at different exposure levels.⁷³ Neither were these risks necessarily evaluated in light of the cost of eliminating them. While this generic approach was not formally promulgated and adopted by OSHA until 1980,⁷⁴ OSHA had applied the concept in regulatory procedures prior to that time. In decisions of the Second, Third, and District of Columbia Circuits, the approach was upheld as a valid exercise of OSHA's authority to regulate toxic substances under section 6(b)(5).⁷⁵

2. Application Under the Section 3(8) Reasonably Necessary Requirement

In 1978 the Fifth Circuit split with the Second, Third, and District of Columbia Circuits by interpreting sections 3(8) and 6(b)(5) of the Act as requiring OSHA to use cost-benefit analysis to justify its toxic substance standards. In *American Petroleum Institute v. OSHA*,⁷⁶ the Fifth Circuit reviewed the final OSHA standard for reducing the permissible exposure level (PEL) to benzene.⁷⁷ The new standard

considered and affirmed that "th[e] substantial costs [we]re justified in light of the hazards." 41 Fed. Reg. 46,751 (1976). OSHA reaffirmed its use of an integrative cost-benefit methodology in its cotton dust standard, adding that "a systematic evaluation of costs and benefits is . . . to be encouraged within the limits of the estimation techniques." 43 Fed. Reg. 27,378-27,379 (1978).

71. 42 Fed. Reg. 54,148 (1977).

72. *Id.*

73. *Id.* at 54,167. On OSHA's generic approach to the regulation of occupational carcinogens see *Baird, Industrial Union Department, AFL-CIO v. American Petroleum Institute: Limiting OSHA's Authority to Regulate Workplace Carcinogens Under the Occupational Safety and Health Act*, 9 B. C. ENV'T'L AFF. L. REV. 623, 638-43 (1981).

74. OSHA's generic carcinogen policy became effective on April 21, 1980. 45 Fed. Reg. 5,002 (1980).

75. *Soc. of Plastics Ind., Inc. v. OSHA*, 509 F.2d 1301 (2d Cir. 1975), *cert. denied*, 421 U.S. 992 (1975); *Synthetic Organic Chem. Mfg. Ass'n v. Brennan*, 503 F.2d 1155 (3d Cir. 1974) *cert. denied*, 420 U.S. 973 (1975); *Indus. Union Dep't v. Hodgson*, 499 F.2d 467 (D.C. Cir. 1974).

76. 581 F.2d 493 (5th Cir. 1978).

77. This standard appears at 43 Fed. Reg. 5918-5963 (1978). Benzene is a chemical used chiefly as an intermediate in the production of other organic chemicals. It is also used in

lowered the PEL from 10 parts per million (ppm) to 1 ppm based on recent evidence linking benzene exposure to an increase in work-related cancer cases. The court held that, under section 3(8) of the Act, a standard is not "reasonably necessary or appropriate to provide safe or healthful employment" unless it is justified by a cost-benefit analysis.⁷⁸ Rather than a strictly monetized form of cost-benefit analysis, however, the court envisioned an integrative exercise, as it stated: "Although the agency does not have to conduct an elaborate cost-benefit analysis, . . . it does have to determine whether the benefits expected from the standard bear a reasonable relationship to the costs imposed by the standard."⁷⁹

The government had argued that, even if section 3(8)'s reasonably necessary language imposed a requirement of cost-benefit analysis, the section was superseded by section 6(b)(5)'s specific directive to set the lowest possible PEL, limited only by feasibility.⁸⁰ Feasibility under section 6(b)(5), the government argued, depends only on the financial impact of the regulation on the industry, not on an evaluation of the regulation's costs against its benefits. The court rejected this argument, holding that section 3(8) sets the requirements for all OSHA standards, including section 6(b)(5) toxic substance standards.⁸¹

As a corollary to its main holding, the court held that under section 3(8) the Secretary must also provide an estimate of the expected

manufacturing products such as motor fuels, detergents, pesticides, and paint. 43 Fed. Reg. 5918 (1978). The principal harm from benzene comes from inhalation of its vapor. *Id.* at 5920. OSHA estimated in 1978 that almost 1.5 million workers were exposed to low levels of benzene, with over half of this group consisting of service station employees. Because the benzene standard is inapplicable to the sale of gasoline after its discharge from bulk terminals, however, service station employees are excluded from its protection. *Id.* at 5935; *see* *Indus. Union Dep't v. Am. Petroleum Inst.*, 448 U.S. 607, 616 n.6 (1980). Health experts have linked benzene exposure at high concentration levels to a significantly increased risk of leukemia. 43 Fed. Reg. 5925 (1978). Exposure to benzene can also lead to various types of malignant diseases and serious blood disorders. *Id.* at 5921.

78. 581 F.2d 493, 503 (5th Cir. 1978).

79. *Id.*

80. *Id.* at 502.

81. The court viewed section 6(b)(5) as indeed consonant with section 3(8), as it stated: [Section 6(b)(5)] does not give OSHA the unbridled discretion to adopt standards designed to create absolutely risk-free workplaces. To the contrary, that section requires standards to be feasible, and it contains a number of pragmatic limitations in the form of specific kinds of information OSHA must consider in enacting [toxic substance] standards Those include 'the best available evidence,' 'research, demonstrations, experiments, and such other information as may be appropriate,' 'the latest available scientific data in the field,' and 'experience gained under this and other health and safety laws.'

581 F.2d at 502.

health benefits of a new standard.⁸² In this case, however, the Secretary had found only that the health benefits of the benzene standard were "likely" to be "appreciable."⁸³ Because the Secretary had neither adequately estimated the health benefits of the proposed standard, nor compared those benefits to the economic costs imposed upon the industry, the court set aside the 1 ppm standard for benzene.⁸⁴ The Fifth Circuit in *American Petroleum Institute v. OSHA* therefore broke new ground by explicitly holding that, under sections 3(8) and 6(b)(5), OSHA's toxic substance standards must be justified on a cost-benefit basis. In light of this novel holding, OSHA and the union challengers appealed the case to the Supreme Court.

III. SUPREME COURT REVIEW OF COST-BENEFIT ANALYSIS IN OSHA REGULATIONS

A. Industrial Union Department, AFL-CIO v. American Petroleum Institute: *The Supreme Court Creates the Significant Risk Requirement and Avoids the Feasibility Issue*

By granting certiorari to review the Fifth Circuit's decision in *American Petroleum Institute v. OSHA*, the United States Supreme Court agreed for the first time to review a toxic substance standard promulgated by OSHA. Under the new name of *Industrial Union Department v. American Petroleum Institute*,⁸⁵ the Fifth Circuit's decision was upheld by the Supreme Court;⁸⁶ yet, the Court did so without reaching the issues of feasibility and cost-benefit analysis. Instead, a plurality⁸⁷ of the Court found that OSHA's standard for benzene must be set aside for failure to meet a threshold test. The plurality found that before OSHA may regulate a toxic substance *at all*, the Secretary must show that a *significant risk* of health impairment presently exists and that the risk can be eliminated or lessened by a change in industry practices.⁸⁸

82. *Id.* at 503.

83. *Id.*; see 43 Fed. Reg. 5941 (1978).

84. *Id.* at 505.

85. 448 U.S. 607 (1980).

86. *Id.* at 662.

87. The plurality consisted of Justice Stevens, who authored the plurality opinion, Justice Stewart, Chief Justice Burger, and Justice Powell. Justice Powell concurred that a threshold test of significant risk must be met, but would have held that a cost-benefit analysis was required as well. See *infra* text and notes at notes 339-40. Justice Rehnquist concurred in the judgment, but argued that the section 6(b)(5) feasibility requirement should be invalidated as an unacceptable delegation by Congress of legislative power to OSHA. See *infra* note 157. Justices Marshall, Brennan, White, and Blackmun dissented.

88. 448 U.S. 607, 641-42.

The *Industrial Union* plurality reached this conclusion through a construction of section 3(8) of the Act. Writing for the plurality, Justice Stevens reasoned that for a standard to be "reasonably necessary . . . to provide safe or healthful employment"⁸⁹ under section 3(8), OSHA must show that the workplace to be regulated is not presently safe.⁹⁰ Justice Stevens then distinguished the term "safe" from "risk-free." He observed that there are many activities that we engage in daily, such as breathing city air, which entail some risk of injury, but which few people would consider unsafe.⁹¹ The plurality therefore defined an unsafe workplace as one that presents a significant risk of health impairment.⁹² Thus, before OSHA may regulate a toxic substance at all, it must satisfy the requirement of section 3(8) by showing the existence of a significant risk.⁹³

The plurality then turned its attention to the union petitioner's claim that the general requirements of section 3(8), however construed, do not override the specific directives set forth in section 6(b)(5).⁹⁴ Justice Stevens rejected the union's claim, noting that section 6(b)(5) toxic substance standards constitute a subgroup of all OSHA standards and, therefore, are incorporated by reference into section 3(8).⁹⁵ He found no reason why the requirements of section 3(8) should not apply to section 6(b)(5) standards, regardless of any separate and additional requirements — the feasibility requirement in particular — imposed by the latter section.

The plurality next examined whether OSHA had met its burden of proof that the present standard for benzene of 10 ppm presented a significant risk of health impairment. Noting that OSHA's sole finding related to this requirement was that the benefits of lowering the PEL from 10 to 1 ppm were "likely" to be "appreciable,"⁹⁶ the plurality found that OSHA had failed to carry its burden of showing a significant risk. Sufficient evidence did not exist in the record on

89. 29 U.S.C. § 652(8) (1976).

90. 448 U.S. 607, 642.

91. *Id.*

92. *Id.* at 641-52.

93. Moreover, the plurality held that the significant risk requirement applies not just to section 6(b)(5) toxic substance standards, but to all permanent standards promulgated by OSHA. This conclusion follows because the plurality created the significant risk requirement under section 3(8), which provides the general definition for all occupational safety and health standards promulgated under the Act. *Id.* at 642-43.

94. Brief for Petitioner at 27-33, *Indus. Union Dep't v. Am. Petroleum Inst.*, No. 78-911 (filed July 1979).

95. 448 U.S. 607, 642.

96. 43 Fed. Reg. 5941 (1978).

this point.⁹⁷ Because it disposed of the case on this threshold issue, the plurality found no need to address the issue of cost-benefit analysis under either the feasibility requirement of section 6(b)(5) or the reasonably necessary requirement of section 3(8).

The Supreme Court's refusal to decide the issue of cost-benefit analysis under the Act, however, was short lived. The Court ultimately decided the issue one year later in *American Textile Manufacturers Institute v. Donovan*, on review of the D.C. Circuit Court's opinion upholding OSHA's permanent standard for cotton dust.⁹⁸ Because of the importance of the cotton dust case, the following section supplies the factual background to the controversy before discussing the Supreme Court's opinion and its implications in detail.

*B. American Textile Manufacturers Institute v. Donovan:
The Supreme Court Confronts the Cost-Benefit Issue*

1. Health Hazards and Regulatory History of Cotton Dust

OSHA's cotton dust standard,⁹⁹ issued in 1978, was promulgated to protect workers from byssinosis, a progressive respiratory disease caused primarily by the inhalation of cotton dust.¹⁰⁰ Byssinosis, known as brown lung disease in its more severe forms, has been categorized into four grades.¹⁰¹ The symptoms of the disease in its least serious form include shortness of breath, coughing, and tightness in the chest.¹⁰² Byssinosis in its most acute form is an irreversible and disabling chronic obstructive pulmonary disease, clinically similar to chronic bronchitis or emphysema.¹⁰³

97. 448 U.S. 607, 653-58.

98. *AFL-CIO v. Marshall*, 617 F.2d 636 (D.C. Cir. 1979).

99. 29 C.F.R. § 1910.1043 (1981).

100. Cotton dust is defined as:

dust present in the air during the handling or processing of cotton which may contain a mixture of many substances including ground-up plant matter, fiber, bacteria, fungi, soil, pesticides, non-cotton plant matter and other contaminants which may have accumulated with the cotton during the growing, harvesting and subsequent processing or storage periods. Any dust present during the handling and processing of cotton through the weaving or knitting of fabrics, and dust present in other operations or manufacturing processes using new or waste fibers or cotton fiber by-products from textile mills are considered cotton dust.

29 C.F.R. § 1910.1043(b) (1981) (Cotton Dust Standard).

101. 41 Fed. Reg. 56,500-56,501 (1976). Workers sometimes contract a severe grade of the disease without ever experiencing the milder grades. *ATMI*, 452 U.S. 490, 498 n.10.

102. 43 Fed. Reg. 27,352 (1978).

103. *Id.* The initial symptoms of byssinosis are characterized by the "Monday morning" syndrome, in which the worker experiences breathlessness and tightness in the chest shortly after returning to work after a weekend away from cotton dust. The symptoms initially subside during the work week, but later extend to other workdays until the ailment eventually has become

In developing its standard under section 6(b)(5), OSHA compiled data estimating that, as of 1971, 250,000 to 800,000 workers were exposed daily to the risks of cotton dust.¹⁰⁴ In addition, the reported incidence of byssinosis has been as high as 30 percent of the work force in the cotton industries.¹⁰⁵ One estimate indicated that, as of 1978, approximately 8 percent of all employed and retired cotton mill workers, or about 35,000 people, suffered a disabling form of byssinosis.¹⁰⁶ The risk of byssinosis among workers in the cotton industry is, therefore, quite substantial.

The high incidence of byssinosis among cotton workers has been known for centuries.¹⁰⁷ Although other governments had recognized and warned of the disease earlier,¹⁰⁸ the United States did not recognize byssinosis as an occupational hazard until the 1960's. The first call for action against byssinosis came in 1966, when the American Conference of Governmental Industrial Hygienists (ACGIH) recommended a value for cotton dust of 1000 micrograms-per-cubic-meter ($\mu\text{g}/\text{m}^3$) as a permissible exposure level (PEL).¹⁰⁹ This standard was not enacted until 1968 when the Secretary of Labor adopted the 1000 $\mu\text{g}/\text{m}^3$ limit pursuant to the Walsh-Healy Act.¹¹⁰

When the Occupational Safety and Health Act was passed in 1970, section 6(a) required OSHA immediately to adopt the 1000 $\mu\text{g}/\text{m}^3$ PEL as an interim "established federal standard" for cotton dust.¹¹¹ Not long after passage of the Act, revision of the 1000 $\mu\text{g}/\text{m}^3$ PEL began. In 1974, following a lowering of the recommended PEL to

continuous and permanent. While the acute symptoms of exposure to cotton dust are reversible, the long-term consequences are not. Bouhuys, *Byssinosis in the United States*, New England Journal of Medicine, July 27, 1967, at 170, 174; Nader, *The Cotton Mill Killer*, The Nation, March 15, 1971, at 335. Many studies have shown that the disease occurs among cotton workers irrespective of other environmental factors such as air pollution, climate, and cigarette smoking. Bouhuys, *supra* note 103, at 171.

104. OSHA relied on Nader, *supra* note 103 (estimating 250,000 textile workers exposed), and the statement of Sidney M. Wolfe and Peter Greene, Public Citizen's Health Research Group, in *AFL-CIO v. Marshall*, 617 F.2d 636 (D.C. Cir. 1979), Joint Appendix to Record 3137 (estimating 800,000 cotton workers exposed).

105. Nader, *supra* note 103, at 335.

106. 43 Fed. Reg. 27,353 (1978). This study assumed 200,000 currently employed workers and 235,000 retired workers.

107. 41 Fed. Reg. 56,500 (1976). See *AFL-CIO v. Marshall*, 617 F.2d 636, 644 n.11 (D.C. Cir. 1979).

108. England first promulgated workplace regulations to reduce the incidence of byssinosis in 1942. 43 Fed. Reg. 27,351 (1978).

109. *Id.*

110. 34 Fed. Reg. 7953 (1969). See *supra* note 30.

111. 29 U.S.C. § 655(a) (1976). See *supra* note 30.

200 $\mu\text{g}/\text{m}^3$ by the ACGIH,¹¹² the National Institute for Occupational Safety and Health (NIOSH)¹¹³ recommended to OSHA that it propose a similar 200 $\mu\text{g}/\text{m}^3$ standard for cotton dust.¹¹⁴ OSHA then published an Advanced Notice of Proposed Rulemaking,¹¹⁵ requesting comments from interested parties on this revised standard. In late 1976, OSHA published its proposed new toxic substance standard of 200 $\mu\text{g}/\text{m}^3$ for all segments of the cotton industry.¹¹⁶ After a ninety-day period for written comments, OSHA conducted a series of hearings which engendered widespread participation by representatives of both industry and labor, as well as experts from the fields of science, medicine, economics, and industrial hygiene.¹¹⁷ In June of 1978, OSHA issued its final cotton dust standard.¹¹⁸ The final standard, which was ultimately contested in *ATMI*, set a PEL of 200 $\mu\text{g}/\text{m}^3$ over an eight-hour period only for the yarn manufacturing segment of the cotton industry. The standards for other segments of the industry were less severe: 750 $\mu\text{g}/\text{m}^3$ for slashing and weaving operations in the textile industry; 500 $\mu\text{g}/\text{m}^3$ for all other processes in the cotton industry.¹¹⁹ The standard specified as methods of achieving the new exposure limit the use of both engineering controls such as special ventilation systems, and work-practice controls such as particular floor sweeping procedures.¹²⁰ A four-year compliance period was set by the standard, with employers

112. 43 Fed. Reg. 27,351 (1978). The ACGIH's revised recommendation was based on new data compiled by the British Occupational Hygiene Society, together with the fact that the ACGIH had revised its definition of exposure limit to encompass measurement of respirable dust rather than total dust. *Id.*

113. *See supra* note 31.

114. 41 Fed. Reg. 56,500 (1976). NIOSH's recommendation was pursuant to §§ 669(a)(3) and 671(d)(2) of the Act, 29 U.S.C. §§ 669(a)(3), 671(d)(2) (1976).

115. 39 Fed. Reg. 44,769 (1974).

116. 41 Fed. Reg. 56,498 (1976).

117. 43 Fed. Reg. 27,351 (1978).

118. 29 C.F.R. § 1910.1043 (1981).

119. 43 Fed. Reg. 27,362 (1978). With respect to slashing and weaving operations, OSHA had concluded that the PEL could be raised from the proposed 200 $\mu\text{g}/\text{m}^3$ level to 750 $\mu\text{g}/\text{m}^3$ because the dose-response curves used to estimate the risk indicated that the 750 $\mu\text{g}/\text{m}^3$ level would provide these workers with an environment as safe as that experienced by their co-workers in other textile operations at a 200 $\mu\text{g}/\text{m}^3$ level. 43 Fed. Reg. 27,360 (1978). With respect to the processes in the nontextile segments of the cotton industry, OSHA stated first that due to a change in measurement techniques, the newly established 500 $\mu\text{g}/\text{m}^3$ level would be roughly equivalent to the existing 1000 $\mu\text{g}/\text{m}^3$ limit. In addition, the agency found that it could not make the standard more stringent because of doubts over technological feasibility at levels below 500 $\mu\text{g}/\text{m}^3$ as well as indications that the 500 $\mu\text{g}/\text{m}^3$ level provided a reasonably protective and justified level of safety in those segments of the cotton industry. *Id.* at 27,361. *See id.* at 27,365 for a general explanation of the various processes in the cotton industry.

120. 43 Fed. Reg. 27,363-27,364 (1978).

required to provide respirators to their employees in the interim.¹²¹

In setting the new PEL, the Secretary noted that, similar to most occupational carcinogens, no "safe" level of exposure to cotton dust could be determined.¹²² The Secretary, however, had rejected the more stringent standard of 100 $\mu\text{g}/\text{m}^3$ advocated by the various unions.¹²³ Due to the average background concentration of cotton dust in cotton-producing states,¹²⁴ the unions' proposal would have required many factories to filter the outside air entering through their ventilation systems, a situation the Secretary found to be not within the technological capabilities of the industry either at that time or in the near future.¹²⁵

2. Supreme Court Review of the Cotton Dust Standard

a. Cost-Benefit Analysis Under Section 6(b)(5)

Upon its promulgation, the cotton dust standard was immediately challenged by a coalition of industry groups under the Act's provision for pre-enforcement judicial review in the circuit courts of appeals.¹²⁶ The industry challenged the cotton dust standard under both sections 3(8) and 6(b)(5) of the Act, claiming that the standard was neither reasonably necessary to protect workers, nor technologically or economically feasible. In *AFL-CIO v. Marshall*,¹²⁷ the District of Columbia Circuit upheld the standard in all major respects.¹²⁸ In doing so, the court rejected the Fifth Circuit's ap-

121. 29 C.F.R. § 1910.1043(e)(2) (1981).

122. 43 Fed. Reg. 27,358 (1978).

123. *Id.* at 27,359-27,360.

124. The average concentration of cotton dust in the air in these urban and suburban areas is 58 to 180 $\mu\text{g}/\text{m}^3$. *Id.* at 27,359.

125. *Id.* at 27,359-27,360.

126. 29 U.S.C. § 655(f) provides for judicial review of standards promulgated, modified or revoked by the Secretary.

Any person who may be adversely affected by a standard issued under this section may at any time prior to the sixtieth day after such standard is promulgated file a petition challenging the validity of such standard with the United States court of appeals for the circuit wherein such person resides or has his principal place of business, for a judicial review of such standard. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Secretary. The filing of such petition shall not, unless otherwise ordered by the court, operate as a stay of the standard.

Id. The standard was also challenged by union groups claiming that the four-year implementation period was unnecessarily lengthy. This claim was consolidated with the industry's challenge and ultimately disposed of by the circuit court. *AFL-CIO v. Marshall*, 617 F.2d 636, 673 (D.C. Cir. 1979).

127. 617 F.2d 636 (D.C. Cir. 1979).

128. The court remanded the standard for further consideration only with respect to its application to the cottonseed oil industry, holding that OSHA had not shown economic feasibility for that industry. OSHA's figures had shown that approximately 52 percent of that industry's

proach in *American Petroleum Institute v. OSHA*, which had required OSHA to perform a cost-benefit analysis in promulgating toxic substance standards to satisfy the dual requirements of sections 3(8) and 6(b)(5).¹²⁹

On writ of certiorari, the Supreme Court agreed to review the circuit court's decision in *AFL-CIO v. Marshall*. Under the new name of *American Textile Manufacturers Institute v. Donovan (ATMI)*,¹³⁰ the case put the issue of cost-benefit analysis squarely before the Court. As described earlier, the *Industrial Union* Court never reached the cost-benefit issue, setting aside OSHA's benzene standard for lack of a showing of significant risk of health impairment as required by section 3(8).¹³¹ The threshold test of significant risk, however, was not an issue in *ATMI*. The Secretary had made findings that the risk among cotton industry workers of contracting byssinosis was significant and that the new standard for cotton dust would greatly reduce this risk.¹³² The industry groups, for good reason, had not challenged these findings. The task for the *ATMI* Court, therefore, was to rule on the industrial petitioners' contention that section 6(b)(5)'s feasibility language necessarily implies a requirement for some form of cost-benefit analysis,¹³³ an issue which the *Industrial Union* Court had been unwilling to reach.

In a 5-3 decision,¹³⁴ the Supreme Court in *ATMI* settled the cost-benefit issue by holding that OSHA *need not* and in fact *may not* use cost-benefit analysis under section 6(b)(5) as a criterion for determining worker exposure limits to toxic substances.¹³⁵ The majority opinion, written by Justice Brennan, arrived at this conclusion through a two-step analysis. First, the majority determined that section 6(b)(5)

production capacity would have been forced to shut down if the standard were enforced. *Id.* at 669-73.

129. *Id.* at 662-66. See *supra* text and notes at notes 76-84.

130. 452 U.S. 490 (1981). The change in name is partially explained by the change in Labor Secretaries, from Ray Marshall to Raymond Donovan, that occurred at the inception of the Reagan Administration.

131. See *supra* text and notes at notes 85-97.

132. 43 Fed. Reg. 27,354, 27,358 (1978).

133. The other issues addressed by the *ATMI* Court were (1) whether substantial evidence in the record supported OSHA's determination that the final cotton dust standard was economically feasible, and (2) whether OSHA had the authority to include a medical removal provision in the standard. See *infra* note 138.

134. The majority consisted of Justices Brennan, White, Marshall, Blackmun, and Stevens. Justice Stewart filed a dissenting opinion, see *infra* note 172, and Justice Rehnquist filed a separate dissent in which Chief Justice Burger joined, see *infra* note 157. Justice Powell took no part in the decision of the *ATMI* case.

135. 452 U.S. 490, 508-13.

by itself precludes the use of cost-benefit analysis by OSHA.¹³⁶ Second, the majority concluded that the section 3(8) reasonably necessary requirement imposes no additional restraint on OSHA's standard-setting power under section 6(b)(5).¹³⁷ Given this construction of the Act, the Court then affirmed in most respects the district court's upholding of the cotton dust standard.¹³⁸

In interpreting section 6(b)(5), the Court focused first on Congress' troublesome use of the word "feasible." Justice Brennan noted that the dictionary meaning of the word feasible is "capable of being done."¹³⁹ Thus, the Court interpreted "feasible" to mean "achievable," a construction in harmony with the previous decisions of the Second, Third, and District of Columbia Circuits.¹⁴⁰ The Court then agreed with the lower court's finding that Congress *itself* had performed the cost-benefit analysis for toxic substances,¹⁴¹ "by placing the 'benefit' of worker health above all other considerations save those making attainment of this 'benefit' unachievable."¹⁴² Justice Brennan concluded that "cost-benefit analysis by OSHA is not required by the statute because feasibility analysis is" stipulated instead.¹⁴³

In addition to holding that the Act does not *require* OSHA to perform a cost-benefit analysis for its toxic substance standards, the majority held that OSHA is in fact *prohibited* from engaging in its own cost-benefit analysis for those standards. Justice Brennan found that Congress, by striking its own balance in favor of worker health,

136. *Id.* at 508-12.

137. *Id.* at 512-13.

138. *Id.* at 541. The Court affirmed the circuit court's opinion in all respects except for the lower court's approval of the medical transfer and wage guarantee provision of the cotton dust standard. OSHA had included in the standard a provision that during the four-year implementation period for source controls employees who could not wear a respirator for medical reasons were to be allowed by their employers to transfer to another position, if available, where the dust level already satisfied the standard's PEL. 29 C.F.R. § 1910.1043(f)(2)(v) (1981). The employer also had to guarantee that the employee would not suffer a loss in wages or benefits. *Id.* The Supreme Court held that whether or not OSHA had the power to include such a provision, the agency had failed to show that the provision was related to the achievement of a safe and healthful workplace. 452 U.S. 490, 537-38.

139. *Id.* at 508-09.

140. *See supra* text and notes at notes 52-67.

141. *AFL-CIO v. Marshall*, 617 F.2d 636, 663 (D.C. Cir. 1979).

142. 452 U.S. 490, 509.

143. *Id.* It seems to have gone unnoticed that the term "feasible" does appear in one other section of the Act: § 669(e) provides that the functions of the Department of Health and Human Services under the Act shall, to the extent feasible, be delegated to NIOSH. 29 U.S.C. § 669(e) (1976). This fact lends further support to the *ATMI* Court's plain meaning interpretation of the congressional use of the word "feasible."

preempted any cost-benefit analysis on OSHA's part. He stated flatly that "Congress did not contemplate any further balancing by the agency for toxic material and harmful physical agents standards."¹⁴⁴ Justice Brennan cited numerous statements from the legislative history indicating that the large costs incurred by industry to safeguard its employees were recognized by Congress, but were viewed as reasonable and necessary costs of doing business.¹⁴⁵ He reasoned that when Congress inserted the final version of section 6(b)(5), it was to placate concern that the directive would be construed to require an absolute level of safety which is impossible to achieve without shutting down industries.¹⁴⁶ By inserting the

144. 452 U.S. 490, 513. *See also id.* at 509 ("Any standard based on a balancing of costs and benefits by the Secretary that strikes a different balance than that struck by Congress would be inconsistent with the command set forth in § 6(b)(5)"); *id.* at 521 ("Nowhere is there any indication that Congress contemplated a different balancing by OSHA of the benefits of worker health and safety against the costs of achieving them").

145. During the floor debates, Senator Eagleton had stated that "[t]he costs that will be incurred by employers in meeting the standards of health and safety to be established under this bill are, in my view, *reasonable and necessary costs of doing business.*" 1 LEGISLATIVE HISTORY OF THE OCCUPATIONAL SAFETY AND HEALTH ACT at 1150-51 (1976), *cited in ATMI*, 452 U.S. 490, 521 (emphasis added by Court) [hereinafter cited as 1 LEGIS. HIST.]. *See also infra* text and notes at notes 186-92, describing further remarks in the legislative history cited by the Court to support its interpretation of section 6(b)(5). The Court further noted that "Congress thought that the *financial costs* of health and safety problems in the workplace were as large or larger than the *financial costs* of eliminating these problems." *ATMI*, 452 U.S. 490, 521 (emphasis in original). The Senate, the Court stated, had recognized the staggering economic impact of work-related deaths and disabilities, citing lost wages, the siphoning off of wages to pay workman's compensation benefits, and a huge overall annual loss to the Gross National Product. 1 LEGIS. HIST. at 142, *cited in ATMI*, 452 U.S. 490, 522.

146. Justice Brennan noted that the original bills, Senate Bill s.2193 and House Bill H.R.16785, contained no special provisions for the regulation of toxic substances. 452 U.S. 490, 514-15. Prior to the introduction of the bill ultimately adopted, an amended bill, H.R. REP. NO. 91-1291, 91st Cong., 2d Sess., (1970) (to accompany H.R.16785), 1 LEGIS. HIST., *supra* note 145, at 834, had been introduced in the House to satisfy congressional concern with the special problems of toxic substances. The bill contained the initial version of section 6(b)(5), which addressed the problems of employees having regular exposure to toxic substances over an extended portion of their working lives. The new section did not contain any qualification of feasibility, but instead directed the Secretary to "set the standard which most *adequately* assures, on the basis of the best available professional evidence, that no employee will suffer *any* impairment of health," even from regular exposure to the hazard over his working life. 1 LEGIS. HIST., *supra* note 145, at 834, *cited in* 452 U.S. 490, 515 (emphasis added). Simultaneously, Senator Javits introduced a similar amendment to the Senate bill, but was concerned that the language would be construed to "require *absolute* health and safety in all cases, regardless of feasibility." *Id.* at 515 (emphasis added by Court), *citing* S. REP. NO. 1282, *supra* note 26, U.S. CODE CONG. & AD. NEWS at 5222. Justice Brennan felt that this concern by the Senator was addressed only to whether such a condition was achievable, 452 U.S. 490, 516. Senator Dominick had also expressed concern that this language seemed to call for "a utopia free from any hazards," stating that "[a]bsolute safety is an impossibility." 1 LEGIS. HIST., *supra* note 145, at 480, *cited in* 452 U.S. 490, 517. The Senators introduced an amended version which ultimately was adopted as section 6(b)(5). The new section, which ap-

feasibility requirement, Congress was insisting that the goal of eliminating workplace toxic substances be capable of technological and economic accomplishment.¹⁴⁷ Justice Brennan concluded that Congress wanted OSHA to examine whether its toxic substance standards are technologically or economically achievable, but did not intend that OSHA justify these standards on the basis of a cost-benefit analysis.¹⁴⁸

To support its interpretation of section 6(b)(5), the majority took note of a conspicuous absence, in both the Act and its legislative history, of any express indication by Congress that OSHA must perform a cost-benefit analysis when setting a toxic substance standard. Justice Brennan observed that where cost-benefit analysis is intended, Congress has either indicated this expressly in the statute,¹⁴⁹ or has used the phrase "unreasonable risk," accompanied by explanation in the legislative history, to signify a balancing of costs and benefits.¹⁵⁰ The majority used the lack of either of these expressions in the Act to further support its conclusion that Congress intended no further cost-benefit balancing by OSHA under section 6(b)(5).¹⁵¹

Next, the majority examined the requirement under section 3(8) that a standard be "reasonably necessary or appropriate" to provide a safe or healthful workplace.¹⁵² The industry petitioners had contended that this section poses an additional restraint on OSHA, requiring that the relation between the costs and the benefits of a regulation be a reasonable one.¹⁵³ The majority rejected this interpretation, noting that it would "eviscerate" the feasibility require-

plied only to *toxic* substances or *harmful* physical agents causing *material* health impairment, contained the present directive to set the standard "which most adequately assures, *to the extent feasible* . . . that no employee will suffer material impairment of health." 29 U.S.C. § 655(b)(5) (1976) (emphasis added).

147. 452 U.S. 490, 514.

148. *Id.* at 508-22.

149. The Court gave as examples the Outer Continental Shelf Lands Act Amendments of 1978, 43 U.S.C. § 1347(b) (Supp. III 1979) and the Energy Policy and Conservation Act of 1975, 42 U.S.C. § 6295(a)(1)(D) (1976), among others. *ATMI*, 452 U.S. 490, 510 n.30.

150. *Id.* This language calls for a generalized balancing in the manner introduced by Learned Hand; see *supra* note 48. The Court gave as an example the Consumer Product Safety Act of 1972, 15 U.S.C. § 2056(a) (1976). Another example is the Toxic Substances Control Act, 15 U.S.C. § 2604(f) (1976), together with the explanation contained in S. REP. NO. 698, 94th Cong., 2d Sess., *reprinted in* [1976] U.S. CODE CONG. & AD. NEWS at 4503.

151. 452 U.S. 490, 510-12.

152. 29 U.S.C. § 652(8) (1976).

153. "A standard that consumes enormous resources to produce a negligible reduction in risk is not 'reasonably necessary or appropriate to provide safe or healthful employment. . . .'" Brief for Petitioners at 37, *ATMI*, No. 79-1429 (filed Nov. 20, 1980).

ment under section 6(b)(5).¹⁵⁴ Justice Brennan reached this conclusion by first assuming *arguendo* that section 3(8) requires some form of cost-benefit analysis.¹⁵⁵ Using this assumption, Justice Brennan compared section 3(8) with section 6(b)(5). He reasoned that if a standard were required to meet both a cost-benefit test under section 3(8) and a feasibility test under section 6(b)(5), the standard would inevitably be set at the level indicated by the cost-benefit analysis. According to Justice Brennan, the feasible, or achievable, exposure level of a toxic substance would always be as low or lower than the level justified by cost-benefit analysis. Therefore, to satisfy both criteria, OSHA would be forced to choose the less stringent level.¹⁵⁶ Reasoning that this construction of the section 6(b)(5) feasibility requirement would effectively write that phrase out of the Act, the majority declined to adopt it. Instead, the majority held that section 6(b)(5) imposes separate and additional requirements for issuance of toxic substance standards. For purposes of determining the permissible stringency of a toxic substance standard, the *ATMI* Court held that the specific feasibility requirement of section 6(b)(5) supersedes the general terms of section 3(8).¹⁵⁷

At first glance, this holding might appear to conflict with the Supreme Court's holding in *Industrial Union Department v. American Petroleum Institute*. In both *ATMI* and *Industrial Union* the Supreme Court ruled on the question of which section of the Act,

154. 452 U.S. 490, 513.

155. *Id.* at 512.

156. *Id.* at 513. The Court offered an example in which the PEL for a substance would be 500 $\mu\text{g}/\text{m}^3$ on the basis of feasibility analysis, but would only be as low as 1000 $\mu\text{g}/\text{m}^3$ if the standard were based on cost-benefit analysis. If the statute required OSHA to meet the criteria of both feasibility analysis and cost-benefit analysis, OSHA would be forced to choose the less stringent PEL of 1000 $\mu\text{g}/\text{m}^3$. *Id.*

157. *Id.* at 512-13. Justice Rehnquist, joined by Chief Justice Burger, filed a dissent rearticulating his concurring views in *Industrial Union* that the term "feasible" in section 6(b)(5) is an unconstitutional delegation of legislative power to an administrative agency. He concluded that Congress could not decide whether to require, permit, or prohibit the Secretary from engaging in a cost-benefit analysis. Therefore, Congress masked this fundamental disagreement by including the term "feasible," thereby passing that decision on to OSHA. 452 U.S. 490, 543-48. In Justice Rehnquist's opinion, the quintessentially legislative policy choice of whether to engage in cost-benefit analysis may not be delegated to the nonelected officials of OSHA. Moreover, Justice Rehnquist read the *ATMI* majority opinion to be in agreement with his own view that the term "feasible" *permits* the Secretary to engage in a cost-benefit analysis. *Id.* at 544. It is difficult to see how Justice Rehnquist could so characterize the majority's interpretation of section 6(b)(5), in light of the majority's strongly worded statements that the Secretary is *prohibited* from using cost-benefit analysis. See *supra* text and note at note 144. For views on the invocation of the delegation doctrine by Justice Rehnquist, see *The Supreme Court, 1979 Term*, 94 HARV. L. REV. 242, 245-46 (1980); *The Supreme Court, 1980 Term*, 95 HARV. L. REV. 319, 325 (1981).

3(8) or 6(b)(5), would govern in the event of a conflict between the two. The Court, however, supplied opposing answers to this question. In *Industrial Union*, the plurality held that the general provisions of section 3(8) require a showing of significant risk and that toxic substance standards under section 6(b)(5) are subject to this requirement as are all OSHA standards. The plurality in effect held that section 3(8) governs section 6(b)(5), at least for purposes of determining OSHA's threshold ability to regulate. Conversely, the Court in *ATMI* held that in setting the level of exposure to a toxic substance, the requirements of section 6(b)(5) supersede those of section 3(8). Thus, these holdings appear contradictory.

Upon closer examination, however, the holdings in *Industrial Union* and *ATMI* are reconcilable. In *ATMI*, the Court did not address the threshold showing of significant risk, which both parties agreed had been satisfied. The holding in *Industrial Union* that this threshold showing is required by an incorporation of section 3(8) into section 6(b)(5), therefore, is still intact. The *ATMI* Court's holding that the section 3(8) requirement is not incorporated into the standard-setting procedure for a section 6(b)(5) toxic substance applies only to the issue of whether a cost-benefit analysis is required *after* the threshold showing of significant risk has been met.¹⁵⁸ Therefore, the two opinions govern different aspects of OSHA's procedure for setting toxic substances standards and do not conflict with each other.

b. Economic Feasibility of the Cotton Dust Standard Under Section 6(b)(5)

After discussing the relationship between sections 3(8) and 6(b)(5), the Court turned to a discussion of the economic feasibility of the cotton dust standard. Having established that the standard for economic feasibility is one of achievability on an industry-wide level,¹⁵⁹ the Court turned first to an examination of whether OSHA's

158. The Court noted that "the mere fact that a § 6(b)(5) standard is 'feasible' does not mean that § 3(8)'s 'reasonably necessary or appropriate' language might not impose additional restraints on OSHA. For example, all § 6(b)(5) standards must be addressed to 'significant risks' of material health impairment." The Court, therefore, expressly left open the question whether section 3(8) by *itself* might require a cost-benefit analysis for standards promulgated under provisions other than section 6(b)(5). *ATMI*, 452 U.S. 490, 513 n.32. For an examination of the implications of this decision, see *infra* text and notes at notes 179-204.

159. The *ATMI* majority adopted the view first set out in *Indus. Union Dep't v. Hodgson*, 499 F.2d 467, see *supra* text and notes at notes 53-57, that a standard is economically feasible unless it threatens the existence of the entire regulated industry, even though certain individual employers might be put out of business. See *ATMI*, 452 U.S. 490, 530-31. At this

estimate of the standard's financial compliance costs to the industry was supported by substantial evidence in the record.¹⁶⁰ OSHA had solicited two separate estimates of compliance costs for the cotton dust standard, one by a private group, the Research Triangle Institute (RTI), and one by the industry itself.¹⁶¹ After deciding that both studies overestimated compliance costs, OSHA decided to rely mostly on the industry's estimate, which OSHA considered to be the less inaccurate of the two.¹⁶² Both studies, however, had estimated compliance costs for a standard that was less stringent than the one ultimately adopted by OSHA. The industry, therefore, attacked OSHA's estimate as wholly unrelated to the PEL's in the final standard.¹⁶³ OSHA, on the other hand, argued that although the industry's estimate was based on a less stringent and therefore less costly standard than the one ultimately adopted, any inaccuracy would be offset by the industry's original overestimate of compliance costs. That is, although the estimate may have been greatly overstated with respect to the initial, more lenient standard, OSHA argued that the estimate was a reasonable one with respect to the final, more costly standard.¹⁶⁴

Because the Act establishes original jurisdiction in the federal courts of appeals to review the findings of the Secretary,¹⁶⁵ the Supreme Court's review of the Secretary's estimate of the com-

point, it is useful to review the distinction between cost-benefit analysis and economic feasibility as defined by the *ATMI* Court. Cost-benefit analysis involves a comparison of benefits and costs, and a determination of whether costs are justified in light of the benefits they can achieve; or put another way, whether the expected benefits of an action are worth their costs. In contrast, the *ATMI* Court's definition of economic feasibility involves no such comparison of benefits and costs. Instead, economic feasibility focuses solely on the financial costs of an OSHA standard. OSHA must examine whether the financial costs of compliance with a particular standard are likely to cause a general collapse of the regulated industry. If they will, then the standard will be deemed infeasible, no matter how great, or for that matter how small, the corresponding health benefits of the standard are. Conversely, if the compliance costs are not likely to cause industrial collapse, then the standard will be deemed economically feasible, again regardless of the magnitude of the corresponding health benefits.

160. Section 6(f) of the Act sets forth substantial evidence as the standard for judicial review of OSHA's determinations. 29 U.S.C. § 655(f) (1976). This test is normally meant to be applied to formal on-the-record rulemaking. The courts have had trouble applying the substantial evidence test to OSHA's determinations generated from its informal notice-and-comment rulemaking procedure. See *infra* text and notes at notes 250-54.

161. 43 Fed. Reg. 27,369-27,373 (1978). RTI had estimated a \$2.70 billion compliance cost for a 200 $\mu\text{g}/\text{m}^3$ PEL over all segments of the industry. The industry's estimate, however, put compliance cost at only \$0.66 billion. *Id.* at 27,380.

162. *Id.* at 27,373.

163. Brief for Petitioners at 24-31, *ATMI*, No. 79-1429 (filed Nov. 20, 1980).

164. Brief for the Federal Respondent at 19, *ATMI*, No. 79-1429 (filed Oct. 1980).

165. 29 U.S.C. § 655(f) (1976).

pliance costs was limited to whether the lower court in upholding that estimate had "grossly misapplied" the substantial evidence test.¹⁶⁶ The lower court had found no great error in OSHA's procedure, noting that the agency "reasonably viewed the industry's figure as an overstated estimate for exposure levels set *slightly* higher than those in the agency's final standard."¹⁶⁷ More significantly, the lower court had also been persuaded to rule for OSHA on a fair play basis. The court noted that the industry had refused most of OSHA's requests for methodology and supporting data used in the industry's own cost estimate, claiming that the information was proprietary.¹⁶⁸ This information would have enabled OSHA to refine the cost estimate once the agency determined that it was inaccurate. Because section 6(b)(5) of the Act allows the Secretary to set toxic substance standards on the basis of the "best available evidence,"¹⁶⁹ the lower court had found that the Secretary's reliance on the industry's cost estimate was reasonable and supported by substantial evidence.¹⁷⁰

The Supreme Court had little trouble in upholding the lower court's finding. Although the majority stated that a cost estimate based on the standard actually promulgated would have been preferable, they noted, as had the lower court, both the industry's refusal to supply data connected with its own cost estimate and OSHA's mandate to act upon the best available evidence.¹⁷¹ These facts, along with the deferential standard of review, led the *ATMI* Court to decline to hold that OSHA's cost estimate was unsupported by substantial evidence.¹⁷²

Accepting OSHA's estimate of the industry's compliance costs, the Court then turned its attention to the agency's determination that it would be economically feasible for the industry as a whole to bear

166. 452 U.S. 490, 523 (citing *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 491 (1951)).

167. 617 F.2d 636, 660 (D.C. Cir. 1979) (emphasis added).

168. 43 Fed. Reg. 27,373 (1978), cited in Brief for Federal Respondents at 19, *ATMI*, No. 79-1429 (filed Oct. 1980).

169. 29 U.S.C. § 655(b)(5) (1976).

170. 617 F.2d 636, 662 (D.C. Cir. 1979).

171. 452 U.S. 490, 527-28.

172. *Id.* at 522-30. Justice Stewart, in dissent, would have invalidated the cotton dust standard solely because, in his opinion, OSHA's estimate of the economic costs of compliance was unsupported by substantial evidence. Justice Stewart rebuffed OSHA's "happy conclusion" that once the agency made the final standard more stringent, the industry's estimate could be considered no longer grossly overestimated. Because OSHA never relied upon an estimate of the compliance costs of the actual standard it promulgated, Justice Stewart would have reversed the lower court's upholding of OSHA's cost estimate as a gross misapplication of the substantial evidence test. *Id.* at 541-43.

these costs. While OSHA earlier had relied on the industry's estimate of the magnitude of the costs, OSHA relied here on RTI's estimate of the impact these costs would have on the cotton industry. RTI had determined that although some marginal employers might be forced to shut down, the cotton textile industry as a whole would not be threatened by the proposed cotton dust standard's economic impact.¹⁷³ Furthermore, RTI had reached this conclusion using an estimate of compliance costs more than four times higher than the estimate ultimately adopted by OSHA.¹⁷⁴ This compelling fact, combined with the deferential standard of review, led to the Court's refusal to hold that the lower court had grossly misapplied the substantial evidence test to OSHA's finding of economic feasibility.¹⁷⁵ Thus, the Supreme Court affirmed both OSHA's method of considering economic costs and the application of that method to the cotton dust standard.¹⁷⁶

C. *The Impact of Industrial Union and ATMI*

To regulate workplace toxic substances under section 6(b)(5), the Secretary must now follow the two-step process set forth in the *Industrial Union* and *ATMI* decisions. First, the Secretary must show that the substance regulated poses a significant risk of material health impairment.¹⁷⁷ If the Secretary fails to make a showing of significant risk, OSHA may not regulate that particular toxic

173. 43 Fed. Reg. 27,378 (1978).

174. *Id.*

175. 452 U.S. 490, 536.

176. The Supreme Court denied certiorari on the issue of technological feasibility of the cotton dust standard, litigated in the circuit court and decided in favor of OSHA. The lower court followed the reasoning set out in *Soc. of Plastics Ind., Inc. v. OSHA*, 509 F.2d 1301, 1309 (2d Cir. 1975), that a standard is not technologically infeasible merely because it forces the development of new technology, or has been promulgated on the basis of incomplete scientific knowledge. *AFL-CIO v. Marshall*, 617 F.2d 636, 656-59 (D.C. Cir. 1979). Although the industry and OSHA disagreed over whether the standard was technologically achievable, the lower court upheld OSHA's finding of feasibility largely because of evidence provided by OSHA showing that many employers were already in compliance with the 200 $\mu\text{g}/\text{m}^3$ standard for the spinning through warping operations. See 43 Fed. Reg. 27,362-27,367 (1978). For remaining operations, OSHA also had shown evidence that some mills already were in compliance with the standard and that control measures existed which were capable of increasing compliance. *Id.* at 27,367-27,369. The lower court also noted that while OSHA's findings might be better supported by more extensive research, the additional cost and delay were enough to justify OSHA's decision to forego further studies. 617 F.2d 636, 657-58. Because section 6(b)(5) of the Act requires OSHA to act on the "best available evidence," the court was satisfied that OSHA had made an "informed" decision based on "credible" evidence. *Id.* at 658 (emphasis added by court). Thus, the lower court held that OSHA's determination of technological feasibility was supportable by the studies and testimony it had relied upon.

177. See *supra* text and notes at notes 85-95.

substance at all. If the Secretary can show a significant risk, then he must determine the level at which this risk is no longer significant and promulgate regulations to reduce the risk to this level. Only after the Secretary can make this showing of significant risk does the *ATMI* feasibility test become applicable.

Under *ATMI*, the Secretary must show that the proposed section 6(b)(5) standard is both economically and technologically feasible.¹⁷⁸ The standard will be upheld as economically feasible if it will not cause general financial ruination of the industry, although a certain percentage of marginal employers may be forced out of business. The standard will be upheld as technologically feasible if the technology it requires either exists, or looms on the horizon. Feasibility analysis, under *ATMI*, does not contemplate any showing by OSHA that the costs of a health standard are justified by its related benefits. Reviewing courts will now uphold a toxic substance standard only if OSHA can show that both the significant risk and feasibility tests are satisfied.

While the criteria set out in the *Industrial Union* and *ATMI* decisions are helpful in setting the bounds of OSHA's ability to regulate, a number of important questions remain unanswered. One major question expressly left open by the Court is whether OSHA standards promulgated under provisions other than section 6(b)(5) will be required to undergo a cost-benefit analysis under section 3(8)'s reasonably necessary language standing alone. A second major question concerns the precise limits of the significant risk and feasibility tests as they interact to constrain OSHA's ability to regulate toxic substances under section 6(b)(5). The following two sections describe these problems and their implications.

1. Cost-Benefit Analysis for OSHA's Safety Standards

The Supreme Court's holding in *ATMI* does not apply to all OSHA standards, but only to section 6(b)(5) toxic substance standards. The Court reached its conclusion that cost-benefit analysis is prohibited in the regulation of toxic substances through a consideration of the special directives of section 6(b)(5). OSHA promulgates standards for hazards other than toxic substances, however, through the remaining provisions of section 6(b).¹⁷⁹ The Supreme Court's holding in *ATMI*, therefore, was narrow in the sense that it applies only to

178. See *supra* text and notes at notes 130-58.

179. Section 6(b)(5) is the only subsection within section 6(b) to set special rules for the promulgation of a particular category of occupational hazard. See 29 U.S.C. § 655(b) (1976).

toxic substance standards and not to any of OSHA's remaining standards. The *ATMI* Court expressly left open the question of whether the section 3(8) reasonably necessary requirement might *by itself* require some form of cost-benefit analysis for these non-section 6(b)(5) standards.¹⁸⁰ That is, when OSHA regulates occupational hazards other than toxic substances, the question remains unanswered whether section 3(8) imposes the requirement of a cost-benefit justification since that section is no longer being construed in tandem with the feasibility requirement of section 6(b)(5).

The importance of this issue relates chiefly to OSHA's safety standards, which comprise the main body of OSHA standards not promulgated under section 6(b)(5). A safety standard is the generally accepted term for a standard regulating incidences of immediate bodily harm by prescribing, for example, catch platforms for building roofers, or hand guards for mechanical power presses. In contrast, a health or toxic substance standard¹⁸¹ regulates the incidence of disease caused by prolonged exposure to, for example, a chemical or air pollutant. The *ATMI* Court narrowly held that Congress, by inserting the feasibility requirement in section 6(b)(5), showed a special intent to prohibit cost-benefit analysis in the promulgation of *toxic substance* standards. The Court therefore left the door open for cost-benefit analysis to remain in the Act as a requirement for the promulgation of *safety* standards. An analysis of the *ATMI* opinion reveals that the Supreme Court provided conflicting signals as to whether it would eventually require cost-benefit analysis for safety standards under section 3(8)'s reasonably necessary requirement alone.¹⁸²

One reason for the confusion over whether Congress and the courts intended cost-benefit analysis to apply to safety standards is

180. *ATMI*, 452 U.S. 490, 513 n.32.

181. This article refers to "health" and "toxic substance" standards interchangeably as any standards promulgated by OSHA under section 6(b)(5).

182. As noted in *Regulating Toxic Substances*, *supra* note 49 at 123 n.57, a few courts have extended the section 6(b)(5) feasibility requirement to standards not involving toxic substances. See *AFL-CIO v. Brennan*, 530 F.2d 109, 121 (3d Cir. 1975) (feasibility requirement expressly extended to standard for guards on mechanical power presses); *RMI Co. v. Sec'y of Labor*, 594 F.2d 566, 571 (6th Cir. 1979) (feasibility requirement implicitly extended to noise standard); *Arkansas-Best Freight Sys., Inc. v. OSHRC*, 529 F.2d 649, 654 (8th Cir. 1976) (feasibility requirement expressly extended to standard for safety-toe footwear). The *Arkansas-Best* court noted that in the legislative history, the Senate Committee stated its intent "that standards promulgated under section 6(b) shall represent *feasible* requirements." *Id.* at 654, *citing* S. REP. NO. 1282, *supra* note 26, U.S. CODE CONG. & AD. NEWS at 5183 (emphasis added). It is unclear whether the reference to *all* section 6(b) standards was inadvertent, since the legislative history contains repeated references to the feasibility requirement in

their use of the words "safety" and "health." There was no attempt to distinguish the two words in the Act,¹⁸³ and the courts have drawn few sharp distinctions between the two. This general failure to distinguish between the two words must be kept in mind when examining Justice Brennan's seemingly conflicting statements in *ATMI*. On one hand, Justice Brennan seemed to distinguish safety standards from any connection with the feasibility requirement for toxic substance standards by stating that "Congress could reasonably have concluded that *health* standards should be subject to different criteria than *safety* standards because of the special problems presented in regulating them."¹⁸⁴ On the other hand, Justice Brennan seems to merge the two sets of standards in other parts of the opinion. For example, in discussing the feasibility requirement, Justice Brennan stated that "[n]owhere is there any indication that Congress contemplated a different balancing by OSHA of the benefits of worker *health* and *safety* against the costs of achieving them."¹⁸⁵ To support this statement, Justice Brennan cited congressional concern with the substantial burden on interstate commerce imposed by personal *injuries* and *illnesses*, and *deaths* and *disabilities* in the workplace.¹⁸⁶ These statements by Congress indicate a concern to protect workers from all types of occupational health and safety hazards. Later in the opinion, Justice Brennan noted that Congress "chose to place pre-eminent value on assuring employees a *safe and healthful* working environment, limited only by

the context of section 6(b)(5) only. See also *Nat. Roofing Contractors Ass'n v. Brennan*, 495 F.2d 1294, 1304 (7th Cir. 1974) (dissenting opinion) (promulgation of safety standard should realize "the maximum safety of working conditions consistent with the realities of feasibility and enforceability").

183. For example, the third sentence of section 6(b)(5) speaks of health *and* safety protection, 29 U.S.C. § 655(b)(5) (1976) (emphasis added). In fact, the American Petroleum Institute has relied upon the latter sentences of section 6(b)(5) to support an argument that the feasibility limitation of § 6(b)(5) applies to *all* OSHA standards. See *Regulating Toxic Substances*, *supra* note 49, at 129 n.80.

184. 452 U.S. 490, 512 (emphasis in original). In support of this statement Justice Brennan cited the following statement by the *Industrial Union* plurality:

Congress recognized that there were special problems in regulating health risks as opposed to safety risks. In the latter case, the risks are generally immediate and obvious, while in the former, the risks may not be evident until a worker has been exposed for long periods of time to particular substances. It was to ensure that the Secretary took account of these long-term risks that Congress enacted 6(b)(5).

Id. (citing *Industrial Union*, 448 U.S. 607, 649 n.54).

185. 452 U.S. 490, 521 (emphasis added). Elsewhere, Justice Brennan confined this conclusion to toxic substance standards, stating that "Congress did not contemplate any further balancing by the agency for toxic material and harmful physical agents standards." *Id.* at 513. The Court's inconsistent language is noted by McCarthy, *supra* note 1, at 810 n.91.

186. 452 U.S. 490, 522.

the *feasibility* of achieving such an environment.”¹⁸⁷ These statements indicate that the Court might in the future extend its prohibition of cost-benefit analysis into the area of general safety standards.

In addition, Justice Brennan gave further evidence in his opinion that the degree of protection of worker safety was intended to be equally as high as that of worker health. In support of his feasibility interpretation, Justice Brennan cited the Senate Committee’s concern that standards under section 6(b)(5) “represent feasible requirements” and assure, “*so far as possible*, that no employee will suffer impaired health.”¹⁸⁸ This language, however, is similar to that of section 2(b), which sets the overall policy objective for *all* standards promulgated by OSHA.¹⁸⁹ Moreover, Justice Brennan supported his interpretation of section 6(b)(5) with several other statements made by the Act’s congressional framers which were directed not towards section 6(b)(5) alone, but towards the entire Act in general. For example, Justice Brennan noted that “Congress viewed the costs of health and safety as a cost of doing business,”¹⁹⁰ quoting Senator Eagleton’s comment that “[t]he costs that will be incurred by employers in meeting the standards of *health and safety* to be established under this bill are, in my view, *reasonable and necessary* costs of doing business.”¹⁹¹ In fact, the capstone of the Court’s legislative history argument rested on Senator Eagleton’s remark that “[w]hether we, as individuals, are motivated by simple humanity or by simple economics, we can no longer permit profits to be dependent upon an *unsafe or unhealthy* worksite.”¹⁹² This use of

187. *Id.* at 540 (emphasis added).

188. *Id.* at 516 (citing 1 LEGIS. HIST., *supra* note 145, at 147 (emphasis added by Court)).

189. See 29 U.S.C. § 651(b) (1976).

190. 452 U.S. 490, 520.

191. *Id.* at 521 (first emphasis added by author; second emphasis added by Court). Indeed, Justice Brennan concluded that “Congress understood that the *Act* [not just section 6(b)(5)] would create substantial costs for employers, yet intended to impose such costs when necessary to create a *safe and healthful* working environment.” *Id.* at 519-20 (emphasis added). “Congress was concerned that the *Act* might be thought to require achievement of absolute safety, an impossible standard, and therefore insisted that health and safety goals be capable of economic and technological accomplishment.” *Id.* at 514 (emphasis added).

192. *Id.* at 522 (emphasis added). The Court also cited other remarks by Congressmen which, while not explicitly mentioning both health and safety, nevertheless were directed towards OSHA standards in general rather than toxic substance standards in particular. For example, the Court cited the following remark by Congressman Dent:

Although I am very much disturbed over adding new costs to the operation of our production facilities because of the threats from abroad, I would say there is a greater concern and that must be for the production men who do the producing — the men who work in the service industries and the men and women in this country who daily

congressional authority indicates the Court's implicit realization that Congress was equally concerned with protecting workers from both health and safety hazards.

The reliance by the *ATMI* Court on these statements from the legislative history points out the inconsistency of the Court's opinion. Justice Brennan's strong statement distinguishing health standards from safety standards¹⁹³ is undercut by his use of congressional statements regarding the Act in general to support his interpretation of section 6(b)(5) in particular. If the Court actually considered the Act's safety standards as utterly distinct from the health standards of section 6(b)(5), then the Court would not have used congressional authority as it did. The opinion's inconsistency is inexplicable even if the Court meant that, while Congress intended to achieve the same high level of reduction of both health and safety hazards, the special problems of toxic substances require special methods to determine that level. If so, the Court still offered little support for the contention that Congress may have intended the basic policy distinction of requiring cost-benefit justification for safety standards but not for health standards. If that were the case, then the level of reduction would be greater for health hazards than for safety hazards. As noted in the Court's opinion, however, Congress seems not to have intended this.

A comparison of section 6(b)(5) with section 2(b), which sets the overall policy objective of the Act, supports this conclusion regarding congressional intent. Based on the similarity in the language of the two sections, one can make the argument that section 6(b)(5) does not direct OSHA to provide a greater degree of protection against health hazards than against safety hazards. Section 6(b)(5) directs the Secretary to set the toxic substance standard which most adequately assures, to the extent *feasible*, that *no employee* will suffer *material* impairment of health. Similarly, section 2(b) dictates that the overall objective of the Act is to assure *so far as possible* that *every worker* is provided *safe and healthful* working conditions. The language of the two provisions is synonymous. "No" employee shall suffer "material" impairment of health seems equivalent to "every"

go out and keep the economy moving and make it safe for all of us to live and to work and to be able to prosper in it.

1 LEGIS. HIST., *supra* note 145, at 1030-31, *cited in ATMI*, 452 U.S. 490, 521 n.39. In addition, the Court quoted Senator Yarborough's statement that "[w]e know the costs would be put into consumer goods but that is the price we should pay for the 80 million workers in America." 1 LEGIS. HIST., *supra* note 145, at 444, *cited in ATMI*, 452 U.S. 490, 520.

193. See *supra* text at note 184.

worker shall be assured "safe and healthful" working conditions, particularly in light of the Supreme Court's holding that "safe" is not "risk-free."¹⁹⁴ In addition, the phrase "so far as possible" has the same meaning as the term "feasible," given the *ATMI* Court's construction of "feasible" to mean "achievable."¹⁹⁵ Because section 2(b) applies to all OSHA standards, the Court's argument that Congress intended to prohibit cost-benefit analysis for OSHA's health standards would seem to apply to safety standards as well.¹⁹⁶

Other factors also indicate that Congress did not intend the reasonably necessary requirement of section 3(8) to signal by itself a cost-benefit analysis for safety standards. First, as noted by the *ATMI* Court with respect to the feasibility controversy, when Congress wants a cost-benefit analysis to be performed, Congress has said so, either expressly or by using the phrase "unreasonable risk" as a signal.¹⁹⁷ Neither cost-benefit analysis nor unreasonable risk, however, is mentioned in the Act or its legislative history. Second, a generally accepted approach to statutory interpretation indicates that language from an Act's definitional section, here section 3(8), should not be used to impose substantive limitations on an agency's regulatory power conferred in other sections of the Act. Thus, language in the definitional sections of other statutes similar to the reasonably necessary language in section 3(8) of the Act has been read to require only that actions taken under the power conferring provisions of these statutes bear a reasonable relation to the statutory purposes.¹⁹⁸ Both these elements of the Act's structure weigh against the imposition of cost-benefit analysis to OSHA's safety standards as well as its health standards.

On the other hand, several commentators have concluded that the power granted OSHA to regulate toxic substances is far broader than the power granted OSHA to regulate safety hazards.¹⁹⁹ This

194. See *supra* text and notes at notes 91-92.

195. See *supra* text and notes at notes 139-51.

196. Indeed, the government had relied upon section 2(b) as substantive authority for OSHA's inclusion of the medical transfer and income guarantee provision in the cotton dust standard. Brief for the Federal Respondent at 58, *ATMI*, No. 79-1429 (filed Oct. 1980).

197. See *supra* text and notes at notes 149-50.

198. *Mourning v. Family Pub. Service, Inc.*, 411 U.S. 356, 369 (1973) (reviewing Federal Reserve Board regulation under the Truth-in-Lending Act, 15 U.S.C. § 1604 (1970)); *Thorpe v. Housing Auth'y of City of Durham*, 393 U.S. 268, 280-81 (1969) (construing the United States Housing Act of 1937, 42 U.S.C. § 1408 (1964 Ed., Supp. III)).

199. See *Regulating Toxic Substances*, *supra* note 49, at 128 n.80; McGarity, *Substantive and Procedural Discretion in Administrative Resolution of Science Policy Questions: Regulating Carcinogens in EPA and OSHA*, 67 GEO. L.J. 729, 786 (1979); Berger & Riskin, *supra* note 49, at 294.

view supports the *ATMI* Court's argument that Congress sought to provide maximum protection for worker health and, therefore, prohibited the use of cost-benefit analysis in determining toxic substance exposure levels. It also implies, however, that because Congress evidenced a different intent with respect to the Act's safety standards, the prohibition against cost-benefit analysis cannot automatically be extended to those standards. Perhaps the best argument supporting this view is that by inserting a special subsection for toxic substances, section 6(b)(5), into the general standard setting provision of the Act and by declaring feasibility to be the only limit on OSHA's duty to reduce all risk from these hazards, Congress manifested a desire to provide the Act's maximum protection only to workers exposed to toxic hazards. Workers exposed to safety hazards arguably would sometimes receive a lower degree of protection through reasonably necessary standards determined by weighing the costs of such safety standards against their benefits.

Indeed, the federal government itself noted that Congress granted OSHA a broader power to regulate toxic substances than to regulate safety hazards. In discussing the origin of section 6(b)(5), the government stated: "The nature of the compromise is readily understood: proponents of regulation obtained a sweeping statute concerning toxic substances, while opponents confined the strongest section of the statute to this particular hazard."²⁰⁰ Under this view, Congress could reasonably have intended that OSHA consider financial costs in a different manner when regulating safety hazards than when regulating health hazards. As further support for this theory, commentators point to several reasons why cost-benefit analysis is a more valid criterion for setting safety standards than for setting health standards. Among them are the lack of such problems as latency period and proof of causation, as well as the greater availability of statistics on the number of accidents caused by safety hazards.²⁰¹ Thus, it is conceivable that cost-benefit analysis could be prohibited for health standards, but remain an appropriate criterion for setting safety standards.

The argument that workers exposed to health hazards are meant to receive special protection under the Act, however, is unfounded as an interpretation of congressional intent. A more valid conclusion

200. Brief for Federal Parties at 37, *Indus. Union Dep't v. Am. Petroleum Inst.*, No. 78-911 (filed July 1979).

201. *Regulating Toxic Substances*, *supra* note 49, at 129. Furthermore, respecting OSHA in particular, this casenote cites the special congressional concern evidenced for workers exposed to hazardous substances, and the fact that OSHA's safety standards may be more easily

drawn from the Act's special section on toxic substances is that Congress wanted OSHA to take account of these long-term risks which might otherwise be somewhat neglected, not that it intended a greater degree of protection for workers in this area. This conclusion is borne out by the language of section 6(b)(5). The provision directs the Secretary to assure, to the extent feasible, that no employee will suffer material impairment of health from exposure to a toxic hazard, "*even if* such employee has regular exposure to the hazard . . . for the period of his working life."²⁰² The Supreme Court plurality in *Industrial Union* adhered to this interpretation of the origins of section 6(b)(5), as it stated:

The reason that Congress drafted a special section for [toxic] substances was not . . . because it thought that there was a need for special protection in these areas. Rather, it was because Congress recognized that there were special problems in regulating health risks as opposed to safety risks It was to ensure that the Secretary took account of these long-term risks that Congress enacted § 6(b)(5).²⁰³

Remarks in the legislative history further support this interpretation.²⁰⁴

To summarize, the issue of whether the Act precludes cost-benefit analysis for OSHA's general safety standards as well as for OSHA's toxic substance standards is still unclear. Although the *ATMI* Court expressly left this question open, several factors in the Supreme Court's opinion suggest that the Court in the future would not distinguish between the two types of standards in its conclusion that Congress prohibited OSHA from using cost-benefit analysis. Whether this conclusion would be correct depends upon two questions: first, whether Congress intended that OSHA distinguish be-

criticized than its health standards for being unnecessary, overly prolific, and needlessly detailed. *Id.*

202. 29 U.S.C. § 655(b)(5) (1976) (emphasis added).

203. 448 U.S. 607, 649 n.54. The four dissenting Justices in *Industrial Union*, however, held the opposite view of section 6(b)(5). *See id.* at 711 n.28 (Marshall, J., dissenting).

204. Senator Dominick explained that Congress' intention in adopting section 6(b)(5) was to require the Secretary

to use his best efforts to promulgate the best available standards, and in so doing, . . . he should take into account that anyone working in toxic agents and physical agents which might be harmful may be subjected to such conditions for the rest of his working life, so that we can get at something which might not be toxic now, if he works in it a short time, but if he works in it the rest of his life might be very dangerous; *and we want to make sure that such things are taken into consideration in establishing standards.*

1 LEGIS. HIST., *supra* note 145, at 502-03, *quoted in ATMI*, 452 U.S. 490, 518 (emphasis added).

tween health standards and safety standards when considering the extent to which financial costs should be considered in the standard-setting process; and second, in defining that extent, whether Congress intended to prohibit cost-benefit analysis in the setting of health standards and, therefore, by extrapolation, in the setting of safety standards as well. This article will examine the latter question in a later section. With respect to the first question, however, an examination in this section of congressional intent has indicated that to the extent that OSHA may consider financial costs at all, the agency's procedures should be no different when setting safety standards than when setting health standards.

2. Other Issues Remaining After *ATMI*

In addition to the unresolved issue of whether cost-benefit analysis applies to safety standards, a number of other important issues remain after the *Industrial Union* and *ATMI* decisions. The Supreme Court's opinions leave unresolved the role of cost-effectiveness analysis; the proper application of the feasibility and significant risk tests; and the significance of different types of cost-benefit analysis. The Court, then, did not provide OSHA with a comprehensive set of guidelines on the proper role of cost considerations in OSHA's standard setting procedures.

First, the *ATMI* Court left available the use of cost-effectiveness analysis to evaluate OSHA's toxic substance standards. Cost-effectiveness analysis, as distinguished from cost-benefit analysis, is a method of deciding between alternative regulations which involve either the same costs or the same benefits. In the context of occupational health, if two different types of controls for workplace health hazards involve the same cost, then the one providing the greater degree of health benefits is the more cost-effective. Similarly, if two different types of controls provide the same benefit, then the one which costs less to implement is the more cost-effective. Cost-effectiveness analysis, therefore, involves a comparison of alternative means of achieving a *given* societal goal. In contrast, cost-benefit analysis attempts to evaluate the worth of the societal goal *itself*.²⁰⁵

205. To illustrate, if Method A would achieve a health benefit of two lives saved per year at a cost of \$1 million and Method B would achieve the same health benefit of 2 lives saved per year at a cost of \$2 million, then Method A would be more cost-effective. Neither method, however, is necessarily justifiable under a cost-benefit analysis, as that would depend on whether the value of saving two lives per year is "worth" \$1 million, \$2 million, or more. Cost-benefit analysis, therefore, involves a comparison of costs and benefits which works best when

In a footnote to the *ATMI* decision, Justice Brennan stated that if the same reduction in health risk could be achieved using two different methods, then the "reasonably necessary or appropriate" limitation of section 3(8) might come into play as a restriction on OSHA to choose the less costly method.²⁰⁶ Thus, a claim that an OSHA toxic substance standard is not cost-effective may in the future be the most viable way to challenge the standard. Because cost-effectiveness analysis does not involve the difficult value judgments inherent in a cost-benefit analysis, future courts should be responsive to a cost-effectiveness argument. While courts should not allow cost-effectiveness challenges to burden unduly OSHA's administrative procedures, courts should view these claims as properly brought under the pragmatic policies of the Act. If this analysis is correct, the courts could refuse to uphold an economically feasible standard because it is not cost-effective.

An additional problem remaining after *ATMI* concerns the precise meaning of economic feasibility. The *ATMI* Court held that a toxic substance standard should be judged economically feasible if the affected industry will survive as a whole, although a certain percentage of its employers might be forced out of business.²⁰⁷ Yet, the Court gave no indication of what percentage of an industry's employers may be shut down before the industry as a whole will be deemed financially crippled. Future courts, therefore, are left on their own to determine the precise limits of the industry ruination threshold.²⁰⁸

In addition, a question arises regarding those health or safety hazards which are too small to be considered significant, but, never-

the two — both costs and benefits — are quantified in common units. In contrast, there is no need to reduce costs and benefits to common units in cost-effectiveness analysis, because the goal to be achieved or the money to be spent is already fixed. See E. STOKEY & R. ZECKHAUSER, *supra* note 44, at 153-55; Baram, *supra* note 1, at 478.

206. 452 U.S. 490, 514 n.32.

207. See *supra* note 159.

208. That the economic feasibility formula may be inefficient as a cost constraint is illustrated by the controversy surrounding OSHA's permanent standard for lead. The lead standard was held economically feasible by the courts with respect to the battery manufacturing industry despite the possibility that 200 small producers would be forced out of business. OSHA found that competition would survive through the remaining 30 firms that controlled 90 percent of the market. *United Steelworkers of Am. v. Marshall*, 647 F.2d 1189, 1291-93 (1980). Furthermore, the *ATMI* feasibility limitation on OSHA's regulatory power failed to account for mounting concern that, in rare situations, OSHA should be allowed to cause a de facto prohibition of the occupation itself. See also *AFL-CIO v. Brennan*, 530 F.2d 109, 121 (3d Cir. 1975) ("We do not question that there are industrial hazards so great and of such little social utility that the Secretary would be justified in concluding that their total prohibition is proper if there is no technologically feasible method of eliminating the operational hazard").

theless, pose some threat to workplace health and safety which could be either reduced or eliminated very inexpensively. Under *Industrial Union*, OSHA has no duty to regulate these hazards because they do not present a significant risk. Applying this rule where hazards are inexpensive to reduce, however, seems incompatible with the Act's objective of protecting worker safety and health "so far as possible."²⁰⁹ To refine the significant risk requirement to a point more in line with the Act's objectives, however, might imply that the significance of a risk should turn on its cost of removal — a cost-benefit analysis. Commentators have generally agreed, however, that the *Industrial Union* plurality had no such cost-benefit test in mind in its definition of significant risk.²¹⁰ Therefore, there remains a category of occupational hazards which should be eliminated, but which, according to the *Industrial Union* plurality, Congress has directed OSHA not to regulate.²¹¹

A further problem is that by prohibiting OSHA's use of cost-benefit analysis in the setting of toxic substance standards, the Supreme Court failed to distinguish between the different forms of cost-benefit analysis.²¹² In doing so, the Court overlooked what this article suggests has been an inherent role for the broad, integrative

209. 29 U.S.C. § 651(b) (1976).

210. *The Supreme Court, 1979 Term*, 94 HARV. L. REV. 242, 246 (1980). See also *Significant Risk Requirement*, *supra* note 47; Baird, *supra* note 73; Note, *Avoiding the Use of Cost-Benefit Analysis in the Context of Occupational Safety and Health: The Requirement of Significant Risk*; Industrial Union Department, AFL-CIO v. American Petroleum Institute, 22 B.C.L. REV. 1149 (1981). But see *infra* text and notes at notes 335-36. *The Supreme Court, 1979 Term*, *supra* this note, suggests that the Court may have intended OSHA to specify a certain level of harm as significant (e.g., one-in-ten thousand) and then examine whether it is "more likely than not" that the risk in the workplace to be regulated exceeds that level. *Id.* at 246. Another commentator, on the other hand, suggests that OSHA must in each case determine what level of risk is *de minimus* and support its assessment of whether workplace risk exceeds that level using quantified data. *Significant Risk Requirement*, *supra* note 47, at 555-56.

211. In a related problem it remains unclear whether the significance of a risk is determined by its magnitude with respect to an individual worker, or by the percentage of workers harmed over the entire industry. The *Industrial Union* plurality focused on the overall percentage of workers harmed as the dispositive factor. 448 U.S. 607, 654-55 (1980). Justice Stevens found no need to discuss the magnitude of harm to the individual worker since the case involved cancer-induced deaths. One might speculate that the plurality found the requirement of a threshold degree of harm to the individual worker to be implicit in section 6(b)(5)'s directive to assure that "no [individual] employee will suffer *material* impairment of health." Justice Marshall, however, has pointed out that section 6(b)(5) addresses "material impairment," not material *risk* of impairment; if the latter were true, the Secretary would have no ability to regulate substances which pose only a small risk to any individual worker, but which nevertheless will result in the death of numerous members of the worker pool.

212. While the *ATMI* majority noted the difference in opinion over the meaning of "cost-benefit analysis," the Court nevertheless failed to adopt definitively one interpretation over the other. Addressing the problem in a single footnote, the majority stated uncertainly that

form of cost-benefit analysis in judicial review of agency decisions. A recognition of this role may have enabled the Court to formulate a construction of OSHA rulemaking procedures more in line with congressional goals than the procedures actually settled upon in *ATMI*. The article now turns to a discussion of this inherent role for cost-benefit analysis and its implications for OSHA rulemaking.

IV. COST-BENEFIT ANALYSIS AFTER *ATMI*: THE SUBSTANTIAL EVIDENCE TEST

A. Introduction

The recent controversy over the use of cost-benefit analysis in regulatory decisionmaking can be explained partially by a disagreement over the meaning of the term "cost-benefit analysis."²¹³ One commentator has taken the position, exemplifying the view of other critics, that the use of cost-benefit analysis is invalid in the area of health and environmental decisionmaking because this technique is a purely monetized exercise; it places lives on the same scale as dollars, leaving high officials "twiddling with the weights to see which is heavier."²¹⁴ These opponents, however, have not recognized the possible existence of a broader, nonmonetized, administrative cost-benefit analysis less susceptible to such criticism. Under this integrative type of cost-benefit analysis, all of the positive and negative aspects of a decision, whether monetizable or not, can be conceptually weighed by the decisionmaker in order to reach a rational decision. The decision to use cost-benefit analysis in regulatory decisionmaking may depend on which type — monetized or integrative — is considered.

Certain commentators have suggested that consideration of integrative cost-benefit analysis is trivial, because such an analysis is part of every action we take in our daily lives.²¹⁵ It applies equally, they point out, to every rational decision "of a man to marry or to commit suicide, of a firm to produce or to collude, [or] of a government to tax or to engage in war."²¹⁶ They claim, therefore, that

"[w]hether petitioners' or respondent's characterization is correct, we will sometimes refer to petitioner's proposed exercise as 'cost-benefit analysis.'" *ATMI*, 452 U.S. 490, 506 n.26.

213. See *supra* text and notes at notes 42-51 for a discussion of the varying views on the meaning of the term "cost-benefit analysis."

214. Interview with Howard D. Samuels, President, Indus. Union Dep't, AFL-CIO, *Sierra Club Magazine*, Jan./Feb. 1982, at 146.

215. Steiner, *The Theory of Marginal Public Expenditure Choices*, in *BENEFIT-COST & POLICY ANALYSIS* 325 (R. Zeckhauser, A. Harberger, eds. 1975); Kasper, *supra* note 1, at 1014.

216. Steiner, *supra* note 215, at 335.

there is no point in discussing whether an integrative cost-benefit analysis should be used in making environmental decisions, because it is used and will continue to be used.²¹⁷

It may not be accurate, however, to extend this conclusion concerning the rational individual to the decisions of governmental agencies. Unlike the private actor, the governmental decisionmaker is not committing his own resources to achieve his own benefits.²¹⁸ Instead, the governmental decisionmaker uses cost-benefit analysis to assess how public resources can best be apportioned to provide public benefits, without full knowledge of the extent of the cost-benefit tradeoff desired by the public.²¹⁹ In the area of regulatory decisionmaking, the government regulator must decide the extent that costs should be imposed on one segment of the public in order to provide benefits to a different segment, again without full knowledge of the overall mix desired by the public in general.²²⁰ Rational individualistic behavior, therefore, may not be assumed of the governmental decisionmaker who imposes a particular cost-benefit tradeoff on members of the public.

Integrative cost-benefit analysis appears not to be rendered invalid as a decisionmaking tool merely because it involves a partially subjective decision. As argued by some economists, even where an agency's decision is subjective, cost-benefit analysis can still be a useful tool for organized, rational decisionmaking.²²¹ Formal cost-benefit analysis works most effectively where a method such as market pricing is available to measure costs and benefits in a single unit.²²² Health and environmental decisionmaking, however, often involves intangible costs and benefits which are real and important to society, but are unaccounted for in the market economy.²²³ An integrative

217. Kasper, *supra* note 1, at 1013-15; Steiner, *supra* note 215, at 335-37.

218. See Green, *supra* note 46, at 904.

219. *Id.*

220. *Id.* at 905.

221. See *supra* text and notes at notes 50-51.

222. See Baram, *supra* note 1, at 483.

223. L. HINES, ENVIRONMENTAL ISSUES, POPULATION, POLLUTION AND ECONOMICS 117 (1973). To illustrate why market forces would not reflect public values as to acceptable risk, consider the case of toxic substances in the workplace. Market prices do not reflect true public benefit-cost choice because the costs and benefits go to different recipients; that is, employees bear the health burdens, while employers, stockholders, and consumers enjoy the benefits of lower prices which come from not having to spend money on workplace health controls. See Baram, *supra* note 1, at 487. Baram gives other examples of improper distribution of costs and benefits. For instance, harmful exposure to radiation from a nuclear power plant would occur in the plant environs, while most of the benefits from the energy would be distributed over a broader geographic region. *Id.* at 488, n.54. Baram concludes that "[c]ost-benefit analysis practitioners often obscure the distributional effects on specific population sectors in reaching

cost-benefit analysis, although subjective, may represent a significant advance over a method which ignores some of these factors altogether.²²⁴ This form of cost-benefit analysis falls between a fully monetized cost-benefit analysis and no cost-benefit analysis at all, and may be the most appropriate means of assessing the unquantifiable factors involved in environmental decisionmaking.²²⁵

The remainder of this article examines the relationship between the integrative form of cost-benefit analysis and policy decisions made by OSHA. The article concludes that both Congress and the courts have recognized that an integrative cost-benefit analysis is required of all policymaking agencies such as OSHA. The argument notes that the judicial role in reviewing many agency decisions, including those of OSHA, is to ensure that these decisions are based on substantial evidence in the record as a whole. The Supreme Court has interpreted this requirement to mean that a reviewing court must examine whether the agency's decision was rational. In turn, the Court has held that a rational agency decision must be based on a balancing of all of the evidence, both supportive of and contrary to the decision. Integrative cost-benefit analysis, then, apparently should be imposed by the courts upon agencies as an inherently necessary method of rational decisionmaking. If such a cost-benefit analysis is not utilized by an agency, its decision will not be deemed "rational" and should be struck down by a reviewing court because it is not supported by substantial evidence.

The following section first briefly explains the Supreme Court's interpretation of the substantial evidence test and the impact of that interpretation on the decisions of OSHA and other agencies. Both *Industrial Union* and *ATMI* are then reexamined in light of this con-

'societally optimal' decisions." *Id.* "Constitutional guarantees of due process, equal protection, property rights, and representative government should carry greater weight in solving the distributional problem than assumptions about fairness developed by economists and analysts." *Id.* at 488.

224. NAS REPORT, *supra* note 50, cited in Baram, *supra* note 1, at 484 n.38.

225. This form of cost-benefit analysis has been variously termed "economic impact" analysis, see Roberts and Kossek, *Implementation of Economic Impact Analysis: The Lessons of OSHA*, 83 W. VA. L. REV. 449 (1981), or "cost-sensitive" decisionmaking, see Rodgers, *supra* note 1, at 206-10. Rodgers identifies the various degrees to which different health and environmental statutes require a consideration of costs. He identifies the cost-sensitive model as being more cost-conscious than the cost-oblivious or cost-effective models, but less cost-conscious than the formal cost-benefit analysis model. Rodgers, writing before *ATMI*, identified the OSHA feasibility requirement as a cost-sensitive model. *Id.* at 206. He places this approach, however, at the extreme end of the cost-sensitive spectrum because of the Act's mandate to require all controls possible to reduce a specified health risk without causing industry ruin. *Id.* at 208-09.

struction of the substantial evidence test. The contours of the significant risk and feasibility tests may be construed by OSHA and the courts as combining to prohibit any comparison of costs and benefits in the context of toxic substance regulation. The article concludes, therefore, by examining this apparent prohibition against cost-benefit analysis in light of the integrative cost-benefit model under the substantial evidence test to determine whether any form of cost-benefit analysis remains valid under the OSHA statute.

B. The Role of Cost-Benefit Analysis Inherent in Substantial Evidence Review of Agency Decisionmaking

1. Development of the Substantial Evidence Test

Judicial review of formal²²⁶ administrative decisionmaking has long been governed by the substantial evidence test. The Administrative Procedure Act of 1946²²⁷ requires a reviewing court to invalidate an agency's action that is "unsupported by substantial evidence."²²⁸ In making these determinations, "the court shall review the whole record or those parts of it cited by a party."²²⁹ The first basic interpretation of the substantial evidence standard of review was provided by the Supreme Court in *Consolidated Edison Co. v. NLRB*.²³⁰ There, the Court stated that "[s]ubstantial evidence is more than a mere scintilla. It means such relevant evidence as a

226. See *infra* text and notes at notes 250-54 for a discussion of the difference between formal and informal agency rulemaking, and for a discussion of the arbitrary and capricious standard applied to informal agency rulemaking.

227. 5 U.S.C. §§ 551-559, 701-706 (1976). While the Administrative Procedure Act does not apply to OSHA rulemaking, see *infra* text and notes at notes 250-54, the development of the substantial evidence test under that Act is informative in understanding the test as it is applied to OSHA.

228. 5 U.S.C. § 706(2)(E). On the spectrum of standards for judicial review of findings of fact, substantial evidence falls at least nominally between the clearly erroneous test, which gives the court broad and intrusive powers, and the arbitrary and capricious test, which is highly deferential. K. DAVIS, *ADMINISTRATIVE LAW OF THE SEVENTIES* § 29.00, at 646-47 (1976); Note, *OSHA's Rulemaking Authority Under the Occupational Safety and Health Act*: Marshall v. American Petroleum Institute, 12 LOY. U. CHI. L.J. 229, 238-39 (1981). In recent years, however, this clear delineation between the tests has been blurred by the courts. K. DAVIS, *supra* this note, at 646-54. The Supreme Court's decision in *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402 (1971), which seemed to equate the clearly erroneous and arbitrary and capricious tests, played a major role in generating this confusion, K. DAVIS, *supra* this note, at 648. Disagreement has also been widespread over whether the substantial evidence test is more rigorous than the arbitrary and capricious standard, or whether the two tests are actually equivalent. *Id.* at 649-52. See *infra* note 253.

229. 5 U.S.C. § 706 (1976).

230. 305 U.S. 197 (1938).

reasonable mind ought to accept as adequate to support a conclusion.”²³¹

Initially, it was unclear whether this meant that an agency need only present *something* in the evidence to support its finding, ignoring countervailing evidence in the record,²³² or whether the agency’s determination would be viewed in light of *all* the evidence in the record.²³³ In 1951, the Supreme Court settled this question in *Universal Camera Corp. v. NLRB*.²³⁴ In *Universal Camera*, Justice Frankfurter, writing for the majority, stated that “[t]he substantiality of evidence must take into account whatever in the record fairly detracts from its weight.”²³⁵ The substantial evidence test, therefore, requires a balancing by the court or agency. The reviewing court will examine the agency’s conclusion to ensure it was a reasonable one in light of all the evidence, both supportive of and contrary to the conclusion.

Although *Universal Camera* was viewed as a broadening of the scope of judicial review,²³⁶ the Court in that case recognized that the judicial role is not to determine whether the agency has made the proper decision, but only that it has made a reasonable one. Where lack of expertise or other uncertainty would allow two conflicting conclusions to be reasonably drawn from the same record, the court “may [not] displace the Board’s choice between . . . [the two], even though the court would justifiably have made a different choice had the matter been before it *de novo*.”²³⁷ To ensure that an agency’s decision is reasonable, however, the reviewing court must find that the agency considered as relevant to its decision all the evidence submitted into the record.

2. Application of the Substantial Evidence Test to OSHA Determinations

Under section 6(f) of the Act, substantial evidence is set out as the

231. *Id.* at 229.

232. The case most cited for this proposition is *NLRB v. Waterman Steamship Corp.*, 309 U.S. 206 (1940). See Stason, “*Substantial Evidence*” in *Administrative Law*, 89 U. PA. L. REV. 1026, 1049-50 (1941).

233. See, e.g., *NLRB v. Thompson Products, Inc.*, 97 F.2d 13, 15 (6th Cir. 1938).

234. 340 U.S. 474 (1951).

235. *Id.* at 488.

236. See *Gooding v. Willard*, 209 F.2d 913, 916 (2d Cir. 1954) (“[J]udicial review has been extended by the Administrative Procedure Act to embrace adequate exploration of the record as a whole . . .”). On the scope of the substantial evidence test as a broadening of judicial review, see Jaffe, *Judicial Review: “Substantial Evidence on the Whole Record,”* 64 HARV. L. REV. 1233 (1951). Jaffe suggests that, after *Universal Camera*, the reviewing judge must simply determine whether, under the record, an agency’s finding is a fair one. *Id.* at 1239.

237. 340 U.S. 474, 488.

standard for judicial review of OSHA's determinations.²³⁸ The application of this test to OSHA decisions has proved problematic. The sources of this difficulty are threefold: the first problem concerns the element of legislative-like policymaking present in OSHA's regulatory procedures; the second problem concerns the informal nature of OSHA's rulemaking procedures; and the final problem concerns the frequent lack of definitive scientific data available to support OSHA's determinations. The article now turns to a brief consideration of these problems before discussing the judicial application of cost-benefit analysis under the substantial evidence test.

a. Policy Issues Versus Fact Issues

In section 2(b) of the Act, Congress set for OSHA the basic policy objective of achieving "so far as possible" a safe and healthful workplace.²³⁹ Congress necessarily had to delegate a certain amount of discretionary authority to OSHA to formulate regulatory procedures that would best achieve this goal. For instance, OSHA is obliged to make an essentially legislative determination of what exposure level to toxic substances is "safe."²⁴⁰ The Secretary's policy judgment in this case concerns what industry can achieve in an effort to best protect its employees.²⁴¹ This type of prediction is based primarily on legislative judgment, analogous to a congressman's decision to vote for or against a particular bill.²⁴² OSHA's determinations, therefore, are not confined to factual findings, but often involve a combination of factual findings and legislative-like policy decisions.²⁴³

Courts have almost uniformly held that the substantial evidence test, originally designed for application to an agency's factual findings, applies as well to OSHA's policy decisions.²⁴⁴ Because these

238. 29 U.S.C. § 655(f) (1976).

239. 29 U.S.C. § 651(b) (1976).

240. *See* Indus. Union Dep't v. Hodgson, 499 F.2d 467, 474-76 (D.C. Cir. 1974).

241. *Am. Iron & Steel, Inst. v. OSHA*, 577 F.2d 825, 833 (3d Cir. 1978).

242. *Indus. Union Dep't v. Hodgson*, 499 F.2d 467, 474 (D.C. Cir. 1974).

243. As courts have recognized, however, there are many agencies other than OSHA, particularly in environmentally-related fields, that do perform tasks involving both fact resolution and legislative-like policy decisionmaking. *See, e.g.,* Lead Ind. Ass'n v. EPA, 647 F.2d 1130, 1146 (D.C. Cir. 1980); *Mobil Oil Corp. v. FPC*, 483 F.2d 1238, 1257 (D.C. Cir. 1973).

244. Courts have been concerned with the threshold issue of whether, as a matter of statutory interpretation, Congress intended the substantial evidence test to apply *at all* to OSHA's policy determinations. Under the Act, substantial evidence is the standard for judicial review of the Secretary's "determinations." 29 U.S.C. § 655(f) (1976). The question has arisen whether the Secretary's policy decisions fall into this category, since the substantial evidence test was designed for application to factual determinations and is easiest to apply to them.

policy decisions are of necessity partially subjective, however, a court cannot review them solely on the basis of empirically verifiable facts as is usually the case under the substantial evidence test. Recognizing that the application of the substantial evidence test to OSHA's policy decisions is an "undertaking of different dimensions,"²⁴⁵ the courts understandably have grappled with formulating standards for the test's application in such circumstances. Paralleling the development of the substantial evidence test in other areas of the law, reviewing courts have concluded that for OSHA's policy decisions to be upheld they must be deemed reasonable in light of all the evidence in the record.²⁴⁶ While the courts have articulated

Most court have answered that the substantial evidence test was indeed intended by Congress to encompass the Secretary's policy decisions. *Texas Indep. Ginners Ass'n v. Marshall*, 630 F.2d 398, 404 (5th Cir. 1980); *AFL-CIO v. Marshall*, 617 F.2d 636, 648 n.43 (D.C. Cir. 1979); *Indus. Union Dep't v. Hodgson*, 499 F.2d 467, 475 (D.C. Cir. 1974); *Synthetic Organic Chem. Mfrs. Ass'n v. Brennan*, 503 F.2d 1155, 1158-60 (3d Cir. 1974); *Assoc. Ind. of N.Y. State v. United States Dep't of Labor*, 487 F.2d 342, 348 (2d Cir. 1973); *contra*, *Am. Iron & Steel Inst. v. OSHA*, 577 F.2d 825, 831 (3d Cir. 1978). Although the *American Iron* court alone held that the substantial evidence test is applicable only to the Secretary's factual determinations, the court nonetheless agreed with the other circuit courts that the standard for review of OSHA's policy decisions would be a reasonableness under the record approach. 577 F.2d 825, 833-35.

In *Associated Industries*, the court reasoned that the word "determination" is used throughout section 6 to include policy decisions, particularly in the promulgation of standards. For example, under section 6(b)(1), the first step in the promulgation of a standard is that the Secretary "determine" that the standard "should" be promulgated. These policy decisions, therefore, qualify as "determinations" which are to be reviewed under the substantial evidence test. 487 F.2d 342, 348 & n.5. Similarly, in *Synthetic Organic*, the court observed that

[t]he last sentence of § 6(f) cannot be read in a vacuum. . . . [It] must be read together with the requirement in § 6(e) that the Secretary 'include a statement of the reasons for such action, which shall be published in the Federal Register.' He is not directed to file findings of fact. His reasons for action may include policy determinations as well as factual findings. The requirement that he state reasons strongly suggests that those reasons, whether policy judgments or factual findings, may be subjected to judicial review.

503 F.2d 1155, 1159-60.

245. *Indus. Union Dep't v. Hodgson*, 499 F.2d 467, 475 (D.C. Cir. 1974).

246. Courts in general have used the terms "reasonable" or "rational" to describe the standard to which an agency's policy decisions will be held under the substantial evidence test. See K. DAVIS, *supra* note 228, § 29.01-3; B. SCHWARTZ, *Administrative Law* § 211 (1976). As the Supreme Court stated: "[w]e inquire into the soundness of the reasoning by which the [agency] reaches its conclusions only to ascertain that the latter are rationally supported. *United States v. Allegheny-Ludlum Steel Corp.*, 406 U.S. 742, 749 (1972).

Other courts have framed this same requirement in other words. See *Greater Boston TV Corp. v. FCC*, 444 F.2d 841, 852 (D.C. Cir.), *cert. denied*, 403 U.S. 923 (1971) ("an agency changing its course must supply a *reasoned analysis* indicating that prior policies and standards are being deliberately changed, not casually ignored . . .") (emphasis added); *EDF v. Ruckelshaus*, 439 F.2d 584, 598 (D.C. Cir. 1971) (court's role is to ensure that the agency has provided "a framework for principled decision-making").

this standard in various manners, the standard usually has involved "scrutiny"²⁴⁷ of OSHA's decisions using a "reasonableness under the record" approach.²⁴⁸ As expressed in *Industrial Union Depart-*

247. *Texas Indep. Ginners Ass'n v. Marshall*, 630 F.2d 398, 404 (5th Cir. 1980); *Am. Petroleum Inst. v. OSHA*, 581 F.2d 493, 497 (5th Cir. 1978); *Indus. Union Dep't v. Hodgson*, 499 F.2d 467, 476 (D.C. Cir. 1974).

248. *AFL-CIO v. Marshall*, 617 F.2d 636, 650 (D.C. Cir. 1979) ("[o]ur role . . . is to ensure that the regulations resulted from a process of reasoned decisionmaking consistent with the agency's mandate from Congress"); *Florida Peach Growers Ass'n v. United States Dep't of Labor*, 489 F.2d 120, 129 (5th Cir. 1971). Similarly, the court in *Am. Petroleum Inst. v. OSHA* stated that OSHA's policy judgment must be related to the substantially supported factual premises in a fashion to ensure that "the Secretary carried out his essentially legislative task in a manner reasonable under the state of the record before him." 581 F.2d 493, 497 (5th Cir. 1978). The standard adopted by the *American Petroleum* court involved a two-fold test of consistency with statutory language and purpose, and reasonableness under the record. *Id.*

The *American Petroleum* and *Florida Peach* courts adopted the reasonableness standard as a ramification of the substantial evidence test. The court in *Texas Indep. Ginners Ass'n v. Marshall*, 630 F.2d 398 (5th Cir. 1980), however, stated that while the substantial evidence test is clearly applicable to OSHA's policy decisions, the reasonableness requirement stems from the arbitrary and capricious test as set out in the APA. *Id.* at 404-05. This follows because the arbitrary and capricious test applies to all agency rulemaking, whether formal or informal, 5 U.S.C. § 706(2)(A), even when the substantial evidence test also applies, *see infra* note 252. The *Texas Ginners* opinion therefore illustrates that while judicial confusion may still exist concerning the differences between the substantial evidence test and the arbitrary and capricious test, ultimately the use of either test will result in a determination of reasonableness under the record. The *Texas Ginners* court ultimately adopted a three-step standard of review to determine the reasonableness of an agency's decision:

- (a) whether enough facts are available and have been investigated to render rational the making of a policy judgment;
- (b) whether the factual premises underlying that policy judgment are 'supported by substantial evidence,' although there may be other conflicting evidence, in the record considered as a whole; and
- (c) whether the policy judgment is reasonably related to those substantially supported factual premises so that 'the Secretary carried out his essentially legislative task in a manner reasonable under the state of the record.'

630 F.2d at 405.

Finally, the court in *Synthetic Organic Chem. Mfrs. Ass'n v. Brennan*, 503 F.2d 1155 (3d Cir. 1974), articulated a somewhat different version of the reasonableness standard by adopting a five-step standard of review:

- (1) determining whether the Secretary's notice of proposed rulemaking adequately informed interested persons of the action taken;
- (2) determining whether the Secretary's promulgation adequately sets forth reasons for his action;
- (3) determining whether the statement of reasons reflects consideration of factors relevant under the statute;
- (4) determining whether presently available alternatives were at least considered; and
- (5) if the Secretary's determination is based in whole or in part on factual matters subject to evidentiary development, whether substantial evidence in the record as a whole supports the determination.

503 F.2d at 1160. This five-step standard of review was adopted in *Am. Iron & Steel Inst. v. OSHA*, 577 F.2d 825, 830-31 (3d Cir. 1978).

ment, *AFL-CIO v. Hodgson*, the court's ultimate role is "to see whether the agency, given an essentially legislative task to perform, has carried it out in a manner calculated to negate the dangers of arbitrariness and irrationality."²⁴⁹

b. Informal Rulemaking Procedures

In addition to the inherent difficulty in applying the substantial evidence test to OSHA's determinations because of their policy nature, courts have encountered two other basic problems in applying the test. The first problem involves the nature of OSHA's rulemaking procedures. In the Administrative Procedure Act (APA), which governs judicial review of most agency decisionmaking, Congress formulated the substantial evidence test as the standard of review only for agency decisions that have resulted from formal, adversarial hearings that have generated a full record.²⁵⁰ For agency findings resulting from informal procedures, such as OSHA's notice and comment rulemaking,²⁵¹ Congress through the APA mandated a different standard of judicial review: such a finding will be upheld unless it is found "arbitrary or capricious."²⁵² Rulemaking under OSHA, however, is not governed by the APA. Instead, the procedures OSHA must follow are contained in the Act itself. The perti-

249. 499 F.2d 467 (quoting *Auto. Parts & Accessories Ass'n v. Boyd*, 407 F.2d 330, 338 (D.C. Cir. 1968)).

250. 5 U.S.C. § 706(2)(E) (1976). See *Camp v. Pitts*, 411 U.S. 138, 141 (1973). A formal hearing includes "the right to submit rebuttal evidence, and to conduct such cross-examination as may be required for a full and true disclosure of the facts." *Wirtz v. Baldor Elec. Co.*, 337 F.2d 518, 527 (D.C. Cir. 1964). Thus, a factually complete record will be generated. In contrast, the record from an informal proceeding "generally is a compendium of letters, studies, reports and statements, untested by the adversary process. Reflecting the legislative nature of informal rulemaking, the record often does not even display the full range of considerations before the agency when the decision was made." *AFL-CIO v. Marshall*, 617 F.2d 636, 649 n.49 (D.C. Cir. 1979). It "ordinarily will contain more generalized than specific information, may not contain information tested by cross-examination and will frequently contain much conclusory information based on data gathered by the interested parties." *City of Chicago v. FPC*, 458 F.2d 731, 744 (D.C. Cir. 1971), *cert. denied*, 405 U.S. 1074 (1972). The *City of Chicago* court noted that "[t]he final report of the Attorney General's Committee on Administrative Procedure indicated that judicial review should take into account the nature of the evidence that it was practical to obtain on the issue under consideration." *Id.* at 744 n.62 (citing *Administrative Procedure in Government Agencies*, S. Doc. No. 8, 77th Cong., 1st Sess. 119 (1941)). "In large part, however, the procedural requirements which relevant statutes impose as a precedent to agency action reflect these practicalities." 458 F.2d 731, 745 n.62.

251. See *supra* note 31 (describing OSHA's notice and comment rulemaking procedure).

252. 5 U.S.C. § 706(2)(A) (1976). Under this test, the court may strike down an agency finding only if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." *Id.* An agency finding must meet the arbitrary or capricious standard, along with other criteria of legality and constitutionality, even where the substantial evidence test applies. *AFL-CIO v. Marshall*, 617 F.2d 636, 649 n.45 (D.C. Cir. 1979).

nent provisions of the Act deviate from the normal APA procedure by setting up a somewhat anomalous hybrid system which forces the courts to apply a formal standard of review, the substantial evidence test, to an informal rulemaking procedure.²⁵³ The record generated from this informal procedure has not been tested by the adversarial process and, in OSHA's case, is often massive and unwieldy. Courts, therefore, have been troubled by the task of basing a meaningful substantial evidence review on this type of record, which is not easily suited to close judicial scrutiny.²⁵⁴

c. Scientific Uncertainty

A final problem courts face in applying the substantial evidence test to OSHA's policy decisions is that the scientific community is

253. The disagreement over how the substantial evidence and arbitrary or capricious tests differ, if at all, therefore has real applicability to OSHA. Courts reviewing OSHA's standards have held that the substantial evidence test does provide for more rigorous judicial scrutiny than the arbitrary and capricious test. *AFL-CIO v. Marshall*, 617 F.2d 636, 649 (D.C. Cir. 1979); *Texas Indep. Ginners Ass'n v. Marshall*, 630 F.2d 398, 405 n.24 (5th Cir. 1980); The *AFL-CIO* court, however, noted that while Congress expressly required this more rigorous standard of review, it nevertheless delegated to OSHA "unusually broad discretionary authority to regulate against possible harms." 617 F.2d 636, 649. As pointed out by Professor Davis, Judge Friendly in *Assoc. Ind. of N.Y. v. United States Dep't of Labor*, 487 F.2d 342 (2d Cir. 1973) took a different view, finding that the two standards are basically the same, although one cannot be sure. K. DAVIS, *supra* note 228, at 650. Judge Friendly observed that "[w]hile we still have a feeling that there may be cases where an adjudicative determination not supported by substantial evidence . . . would not be regarded as arbitrary or capricious, . . . in the review of rules of general applicability made after notice and comment rulemaking, the two criteria do tend to converge." 481 F.2d 342, 350. Finally, the Occupational Safety and Health Act is not the only statute in which Congress has used the substantial evidence test for judicial review of informal agency rulemaking. Other statutes which provide for this system include the Toxic Substances Control Act, 15 U.S.C. § 2618(c)(1)(B)(i) (1976), the Federal Trade Commission Improvement Act of 1974, 15 U.S.C. § 57a (e)(3)(A) (1976), and the Consumer Product Safety Act, 15 U.S.C. § 2060(c) (1976).

254. *See, e.g., AFL-CIO v. Marshall*, 617 F.2d 636, 649 n.49, (D.C. Cir. 1979); *Fla. Peach Growers Ass'n v. United States Dep't of Labor*, 489 F.2d 120, 129 (5th Cir. 1974). The deficiencies of an informal record when subjected to the substantial evidence standard of review were highlighted by the court in *Mobil Oil Corp. v. FPC*, 483 F.2d 1238 (D.C. Cir. 1973), as follows:

Informal comments simply cannot create a record that satisfies the substantial evidence test. Even if controverting *information* is submitted in the form of comments by adverse parties, the procedure employed cannot be relied upon as adequate. A 'whole record,' as that phrase is used in this context, does not consist merely of the raw data introduced by the parties. It includes the process of testing and illumination ordinarily associated with adversary, adjudicative procedures. Without this critical element, informal comments, even by adverse parties, are two halves that do not make a whole.

483 F.2d at 1260 (emphasis in original).

Despite the anomaly of the Act's hybrid system, the legislative history makes clear that Congress deliberately adopted it through a legislative compromise. House conferees acceded to

uncertain as to the specific risks associated with many workplace health hazards. For example, much scientific disagreement still exists over whether exposure to certain chemicals at various levels causes cancer. This uncertainty creates the problem of forcing OSHA to base its policy inferences on facts which are in themselves highly uncertain and debatable.²⁵⁵

The Court of Appeals for the District of Columbia faced this difficulty in *Industrial Union Department v. Hodgson*,²⁵⁶ a labor challenge to OSHA's standard for asbestos dust. The *Hodgson* court noted that, although OSHA was obliged to make a policy decision concerning a safe exposure level for asbestos dust, sufficient data was not yet available delineating the precise health effects at various levels of exposure to this hazard.²⁵⁷ In such a case, the court noted that OSHA must regulate hazards "on the frontiers of scientific knowledge."²⁵⁸ The court observed that in such instances the agency's findings cannot be based solely on empirically verifiable facts and, therefore, are not subject to the same type of verification by reference to the record as are certain factual questions.²⁵⁹ The court

the Senate's desire for administrative convenience and flexibility by accepting the informal rulemaking procedure, but nevertheless inserted the substantial evidence test to protect employers from the burdens of a massive federal bureaucracy. See S. REP. NO. 1282, *supra* note 26, U.S. CODE CONG. & AD. NEWS at 5232. See also *Fla. Peach Growers Ass'n v. United States Dep't of Labor*, 489 F.2d 120, 127-29 (5th Cir. 1974). McGarity, *supra* note 199, notes that while a legislative compromise is the most plausible explanation, the argument is undercut by one statement by the House managers revealing the apparent opinion that the "arbitrary and capricious" test is *more* stringent than the "substantial evidence" test. *Id.* at 792 n.327. See also *Assoc. Ind. of N.Y. v. United States Dep't of Labor*, 487 F.2d 342, 348-49 (2d Cir. 1973). The *Associated Industries* court, however, found ample other evidence to support the conclusion that the substantial evidence standard was adopted as part of a legislative compromise. *Id.* at 349.

The hybrid procedure adopted by Congress irked Judge McGowan, author of the opinion in *Indus. Union Dep't v. Hodgson*, who felt that the "new form of uneasy partnership" between agency and court, created by the delegation of legislative power to the agency, was only exacerbated by such an illogical procedure. *Hodgson*, 499 F.2d 467, 469. Judge McGowan stated that this "posed serious problems for a reviewing court," *id.*, but that the duty remained "to decide the case before us in accordance with our statutory mandate, however dimly the rationale, if any, underlying it can be perceived." *Id.* at 470.

255. See, e.g., *Indus. Union Dep't v. Hodgson*, 499 F.2d 467, 474-75 (D.C. Cir. 1974); *Regulating Toxic Substances*, *supra* note 49, at 132-34.

256. 499 F.2d 467 (D.C. Cir. 1974).

257. *Id.* at 475.

258. *Id.* at 474.

259. *Id.* at 475. The *Hodgson* court then defined the court's role in this situation:

What we are entitled to at all events is a careful identification by the Secretary, when his proposed standards are challenged, of the reasons why he chooses to follow one course rather than another. Where that choice purports to be based on the existence of certain determinable facts, the Secretary must, in form as well as substance, find those facts from evidence in the record. By the same token, when the Secretary is

reasoned that nevertheless, Congress did not intend OSHA to have its hands tied while awaiting more precise scientific data. For that reason, the court concluded, Congress inserted in section 6(b)(5) the provision that the Secretary shall set standards on the basis of the "best available evidence."²⁶⁰

Because of the range of problems involved in applying the substantial evidence test to OSHA's policy decisions, reviewing courts have described this task as anywhere from an "intriguing problem"²⁶¹ to

obliged to make policy judgments where no factual certainties exist or where facts alone do not provide the answer, he should so state and go on to identify the considerations he found persuasive.

Id. at 475-76. This statement was adopted in *Texas Indep. Ginners Ass'n v. Marshall*, 630 F.2d 398, 405 n.26 (5th Cir. 1980); *AFL-CIO v. Marshall*, 617 F.2d 636, 649 n.48 (D.C. Cir. 1979). *Accord*, *Synthetic Organic Chem. Mfrs. Ass'n v. Brennan*, 503 F.2d 1155, 1157 (3d Cir. 1974); *Assoc. Ind. of N.Y. v. United States Dep't of Labor*, 487 F.2d 342, 353 (2d Cir. 1974). The *Texas Ginners* court noted that Congress recognized these inherent problems by including section 6(e), 29 U.S.C. § 655(e), which requires the Secretary to state the reasons for promulgating any standard. 630 F.2d 398, 405 n.26.

In noting the technically complex nature of OSHA's rulemaking proceedings, the *Marshall* court relied on a statement in *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir.), *cert. denied*, 426 U.S. 941 (1976), that:

[w]here a statute is precautionary in nature, the evidence difficult to come by, uncertain, or conflicting because it is on the frontiers of scientific knowledge, the regulations designed to protect the public health, and the decision that of an expert administrator, we will not demand rigorous step-by-step proof of cause and effect. Such proof may be impossible to obtain if the precautionary purpose of the statute is to be served The Administrator may apply his expertise to draw conclusion from suspected, but not completely substantiated, relationships between facts, from trends among facts . . . from probative preliminary data not yet certifiable as 'fact,' and the like.

Id. at 28, *cited in* *AFL-CIO v. Marshall*, 617 F.2d 636, 651 n.64.

The *Marshall* court also noted that when applying the substantial evidence test to a numerical standard, the court considers "whether the agency's numbers are within a 'zone of reasonableness,' not whether its numbers are precisely right." *AFL-CIO v. Marshall*, 617 F.2d 636, 651 n.66, (quoting *Hercules, Inc. v. EPA*, 598 F.2d 91, 107 (D.C. Cir. 1978)). Finally, Judge Bazelon has explained that where agency decisions are technically complex, the judicial role is to "scrutinize and monitor the decisionmaking process to make sure that it is thorough, complete and rational; that all relevant information has been considered; and that insofar as possible, those who will be affected by a decision have had an opportunity to participate in it." Bazelon, *Coping with Technology Through the Legal Process*, 62 CORNELL L. REV. 817, 823 (1977).

260. 29 U.S.C. § 655(b)(5) (1976). See *AFL-CIO v. Marshall*, 617 F.2d 636, 651 (D.C. Cir. 1979) ("[OSHA] may have to fill gaps in knowledge with policy considerations. Congress recognized this problem by authorizing the agency to promulgate rules on the basis of the 'best available evidence' "). The court noted that "[OSHA's] mandate requires it to protect workers' health even before the resolution of all medical and scientific uncertainties about the particular health risk." *Id.* at 654 (citing H.R. REP. NO. 1291, 91st Cong., 2d Sess. 18 (1970) (OSHA not to be "paralyzed" by debate)). See also *Soc. of Plastics Ind. v. OSHA*, 509 F.2d 1301, 1308 (2d Cir. 1975).

261. *Synthetic Organic Chem. Mfrs. Ass'n v. Brennan*, 503 F.2d 1155, 1158 (3d Cir. 1974).

almost an impossibility.²⁶² Despite these problems, however, the courts have uniformly applied the substantial evidence test.²⁶³ If the decision is found to be reasonable in light of all of the evidence in the record, the courts will uphold the agency's choice. The courts' actual application of this standard, however, has often resulted in the imposition of cost-benefit analysis as a decisionmaking criterion, regardless of the actual standards by which the agency decision was made. The discussion now turns to an examination of particular cases that illustrate this point.

C. Substantial Evidence Review: Judicial Recognition That Cost-Benefit Analysis is Inherent in Rational Agency Decisionmaking

1. Introduction

The following sections illustrate the manner in which reviewing courts have required agency policy decisions to be based on integrative cost-benefit analyses in order to be upheld on the basis of substantial evidence. The examination focuses first on cases of general agency policymaking involving agencies other than OSHA that are charged with determining either what is "essential" or "reasonable" with respect to the public interest. The discussion then turns to the OSHA cases decided in the circuit courts before the Supreme Court issued its initial decision construing the Occupational Safety and Health Act in *Industrial Union*.

It should be noted that, unlike monetized cost-benefit analysis, integrative cost-benefit analysis appears to be flexible with respect to the weight given to the various factors used in the analysis. This flexibility appears to be an advantage of integrative cost-benefit analysis. As described below, courts that have required integrative cost-benefit analyses have looked to the agency's enabling statute to determine how to weigh the various factors involved. For example, due to Congress' expressed intent to make worker health and safety the paramount concern under the Occupational Safety and Health Act, actual financial costs of OSHA's standards should be given some, but only very little, weight in applying the substantial evidence test. In a contrasting example, where a court must decide whether transportation rates set by an agency are "just and reasonable" with respect to certain segments of the public, financial costs should be weighed much more heavily under the substantial

262. *Soc. of Plastics Indus. v. OSHA*, 509 F.2d 1301, 1304 (2d Cir. 1975).

263. *See supra* note 244.

evidence test. Thus, integrative cost-benefit analysis enables the agency and the courts to effectuate more closely the congressional purpose behind a statute.

2. The Use of Integrative Cost-Benefit Analysis in General Agency Decisionmaking

A sampling of cases involving judicial review of agency rulings in the context of general agency decisionmaking indicates that courts have required and will continue to require agency policy decisions to be informed by the use of integrative cost-benefit analyses. The three cases described below are presented as representative of any of a number of cases that have imposed such a requirement. In analyzing these decisions, it is useful to note that, while in some cases the court itself has performed the cost-benefit value judgment, in others the court has remanded the case to the agency for such an analysis.

In *Volkswagenwerk Aktiengesellschaft v. Federal Maritime Commission*,²⁶⁴ the cost-benefit issue involved a Federal Maritime Commission determination of just and reasonable rates under the Shipping Act of 1916.²⁶⁵ This issue arose out of a somewhat complicated fact pattern. The Pacific Maritime Association (PMA), a nonprofit corporation of common and contract carriers, ocean terminal operators, and stevedore contractors, was created for the purpose of negotiating and administering contracts with labor unions on behalf of its members.²⁶⁶ In 1957, PMA desired to introduce greater mechanization into the shipping industry, but feared that this would cause strikes or slowdowns by longshoremen during the transformation period.²⁶⁷ As a result of negotiations with the Longshoremen's Union, PMA set up a fund to assure the Union that its workers would share in the financial benefits of the new work-saving devices. The fund, to be collected from PMA's members over a six-year period, was to be used to cushion the effects of automation upon the displaced longshoremen.²⁶⁸ Apparently PMA's members tacitly agreed to pass on the cost of the assessment to the carriers and shippers who used the members' services.²⁶⁹

264. 371 F.2d 747 (D.C. Cir. 1966), *rev'd*, 390 U.S. 261 (1968).

265. 46 U.S.C. § 815 (1961).

266. 390 U.S. 281, 263 (1968).

267. 371 F.2d 747, 749.

268. *Id.*

269. *Id.* at 756.

PMA decided to assess its members on the basis of tonnage carried or handled.²⁷⁰ There were two possible bases upon which to calculate tonnage — by weight, or by measurement.²⁷¹ Whether a tonnage declaration was to be by either weight or measurement depended on how that particular cargo was customarily manifested.²⁷² There was no customary manifesting method, however, in the auto industry; PMA, therefore, decided to assess that industry on the basis of measurement only, regardless of which way a particular automobile cargo was actually manifested.²⁷³

This system worked to the great disadvantage of Volkswagen. On a measurement basis, Volkswagen's cargo calculated out to almost ten times the tonnage, and, therefore, ten times the cost, that it would have constituted on a weight basis.²⁷⁴ Volkswagen claimed that this was a discriminatory burden²⁷⁵ and the company therefore refused to pay Marine Terminal Corporation, its contractual ocean terminal operator and PMA member, which was to collect the charges from Volkswagen and pass them on to the PMA fund.

Specifically, Volkswagen claimed that the assessment was an "unjust and unreasonable" practice in violation of section 17 of the Shipping Act of 1916.²⁷⁶ After a hearing requested by Volkswagen, the Federal Maritime Commission upheld the assessment as within the bounds of the Act.²⁷⁷ The Commission determined that Volkswagen would be accruing substantial benefits from the system of greater mechanization; therefore, the assessment method was not an unjust or unreasonable practice.²⁷⁸ In the Commission's view, the benefits

270. *Id.* at 749.

271. *Id.* PMA assessed tonnage at 2000 pounds per ton by weight, and at 40 cubic feet per ton by measurement. *Id.*

272. *Id.* at 750. "Manifesting" refers to how the cargo is invoiced or otherwise listed. WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 1375 (Unabridged ed. 1976).

273. 371 F.2d 747, 750.

274. *Id.* A Volkswagen automobile equalled 8.7 tons by measurement, which would cost the company \$2.35 per vehicle; in contrast, each automobile equalled 0.9 tons by weight, which would cost the company \$0.25 per vehicle.

275. *Id.*

276. 46 U.S.C. § 816 (1976), which reads:

Every such carrier and every other person subject to this chapter shall establish, observe and enforce just and reasonable regulations and practices relating to or connected with the receiving, handling, storing, or delivering of property. Whenever the Commission finds that any such regulation or practice is unjust or unreasonable it may determine, prescribe, and order enforced just and reasonable regulations or practices.

Id.

277. Volkswagenwerk Aktiengesellschaft v. Marine Terminals Corp., 9 F.M.C. 77 (1965).

278. *Id.* at 82-84.

and burdens to Volkswagen need not have been directly related.²⁷⁹ The Commission's ruling that the assessment was reasonable was upheld on appeal as supported by substantial evidence in the record.²⁸⁰

On writ of certiorari, a majority of the Supreme Court reversed the lower court's decision.²⁸¹ The Court found that the proper determination of just and reasonable rates under section 17 required a cost-benefit analysis to determine whether the correlation of the benefits to the charges imposed was reasonable.²⁸² A construction of the phrase "just and reasonable rates" as requiring an inquiry only into whether the petitioner received substantial benefits was, in the Court's view, a "tortured" interpretation of the statute.²⁸³ The Court noted that a relatively large charge in relation to the company's overall costs was being imposed on Volkswagen.²⁸⁴ Furthermore, the benefits that Volkswagen was to receive were relatively small compared to those to be received by other shippers. Because the unloading of autos was already highly mechanized, the auto shippers stood to gain from the funding agreement only the benefits of a stable labor situation.²⁸⁵ Noting these sizable inequities in Volkswagen's position, the Court remanded the case with a direction that a determination of just and reasonable rates required a finding, "in a word, [of] whether the charge levied is reasonably related to the service rendered."²⁸⁶ The Court's rejection of the substantial benefits construction and substitution of a cost-benefit justification parallels the development of substantial evidence review in the courts from requiring merely some justification in the evidence to requiring a weighing of both the positive and negative evidence.²⁸⁷

Furthermore, it does not appear that the Court contemplated the use of a monetized cost-benefit analysis on remand; rather, the Court held that the Commission need only find a reasonable relation of costs and benefits, or, in other words, employ an integrative form of cost-benefit analysis. It should be noted, however, that in *Volkswagenwerk*, the public policy interests were of an economic

279. *Id.* at 84.

280. *Volkswagenwerk Aktiengesellschaft v. Fed. Maritime Comm'n*, 371 F.2d 747 (1966).

281. *Volkswagenwerk Aktiengesellschaft v. Fed. Maritime Comm'n*, 390 U.S. 261 (1968).

282. *Id.* at 282.

283. *Id.*

284. *Id.* at 281.

285. *Id.* at 281, 266 n.8.

286. *Id.* at 282.

287. See *supra* text and notes at notes 226-37.

nature. Presumably an integrative cost-benefit analysis in this situation will consider the financial costs of the regulation as a relatively important factor. *Volkswagenwerk* is to be contrasted with cases reviewing policy issues where, as with OSHA, health or other personal interests are at stake. In those cases, the financial costs of regulations may be given very little value by courts or agencies in their examination of integrative cost-benefit analyses under the substantial evidence test. The integrative type of cost-benefit analysis, then, provides an agency or court with the flexibility necessary to tune its analysis to conform with statutorily expressed policies.

Another case which illustrates judicial use of a nonmonetized cost-benefit analysis to review an agency's decision that an action is reasonable is *Dodson v. National Transportation Safety Board*.²⁸⁸ In *Dodson*, the Federal Aviation Authority denied an air medical certificate to a prospective pilot because of the applicant's heart condition. The FAA has discretion to limit the issuance of air medical certificates to the extent necessary to "assure safety" in air commerce.²⁸⁹ The district court, in applying the substantial evidence test to review the FAA's decision, invoked the tort law concept of unreasonable risk to signal a generalized cost-benefit balancing. The court held that the plaintiff was subject to an unreasonable risk of heart attack and, therefore, presented a substantial risk to air safety.²⁹⁰ The FAA's decision to deny the certificate was subsequently upheld by the court as supported by substantial evidence.²⁹¹

The *Dodson* court's decision entailed the tacit use of a cost-benefit analysis. The court reasoned that, given the large probability that the applicant would suffer a heart attack, the overall weighing of costs and benefits militated against the issuance of a license. In *Dodson*, no quantification of costs or benefits was either required or possible; the ultimate decision of the FAA rested on its own subjective judgment. The import of *Dodson* lies in its example of a reviewing court relying on a cost-benefit standard, through the vehicle of

288. 644 F.2d 647 (7th Cir. 1981).

289. The Federal Aviation Act provides that the Administrator of the FAA shall issue a certificate after determining that the applicant is properly qualified and physically fit, with such limitations as are necessary to assure safety in air commerce. 49 U.S.C. § 1422(b) (1976).

290. 644 F.2d 647, 650.

291. Experts for both sides had agreed that the petitioner was subject to an increased likelihood of heart attack due to partially blocked arteries. The court found that this was enough to show an unreasonable risk of heart attack and, therefore, to support the lower court's finding by substantial evidence. *Id.*

unreasonable risk, as a criterion for reviewing an agency's decision under the substantial evidence test.

Finally, *International Harvester Co. v. Ruckelshaus*²⁹² provides a further illustration of this concept. In *International Harvester*, the Ford, General Motors, and Chrysler Corporations sought review of an Environmental Protection Agency (EPA) order denying their petitions for one-year suspensions of the 1975 deadline for auto emissions standards set by the Clean Air Act. The EPA was empowered under the Clean Air Act to grant a suspension if the agency determined that it was "essential to the public interest or the public health and welfare of the United States."²⁹³ The automakers, in seeking a suspension, had claimed that presently existing technology was not capable of meeting emissions standards by the mandated compliance date.²⁹⁴ The EPA Administrator had found that the automakers' evidence did not establish such technological infeasibility²⁹⁵ and, consequently, had denied the automakers' applications.²⁹⁶

On review, the court of appeals explained that its task was to determine whether the EPA Administrator's conclusion rested on a "reasoned basis."²⁹⁷ The court did not elaborate on the standard of review it was applying, and the case appears technically to have been decided under the arbitrary and capricious standard rather than the substantial evidence standard. Although this section deals with the application of the substantial evidence test, a description of the *International Harvester* case is pertinent here for several reasons. First, as described below, it is an excellent example of a judicially recognized requirement of cost-benefit analysis. In addition, this case illustrates that in the area of agency policy decisions, the concept of a cost-benefit requirement is pervasive regardless of the label given to the standard of review. Indeed, as some commentators have observed, the substantial evidence and arbitrary and capricious standards tend to merge towards virtual identity in these types of cases.²⁹⁸ The *International Harvester* case, moreover, closely resembles a substantial evidence case because of its employment of what has become known as hybrid rulemaking, in which a court will order a greater development of the record than ordinarily required

292. 478 F.2d 615 (D.C. Cir. 1973).

293. 4 U.S.C. § 1857f-1 (b)(5)(c) (1976).

294. 478 F.2d 615, 624-25.

295. *Id.* at 626.

296. *Id.* at 622.

297. *Id.* at 627.

298. *See supra* note 253.

in order to facilitate its reviewing task. Because the court focused on the reasoned basis of the Administrator's decision keyed to all relevant evidence in the record, this case illustrates the pervasiveness of judicially imposed cost-benefit analyses regardless of the technical label applied to the standard of review.

On the merits, the court held that both the Administrator's decision and the court's own review of the reasonableness of that decision must be based on an integrative cost-benefit analysis. The court stated:

This case inevitably presents, *to the court as to the Administrator*, the need for a perspective on the suspension that is informed by an analysis which balances the costs of a 'wrong decision' on feasibility against the gains of a correct one. These costs include the risks of grave maladjustments for the technological leader from the eleventh-hour grant of a suspension, and the impact on jobs and the economy from a decision which is only partially accurate, allowing companies to produce cars but at a significantly reduced level of output. Against this must be weighed the environmental savings from denial of suspension.²⁹⁹

Thus, the court brought into the analysis a broad range of economic, environmental, and social costs and benefits.

In reviewing the EPA determination, the court focused its attention on the issue of technological feasibility — a crucial factor in the EPA decision. Recognizing that the EPA prediction of technological feasibility was highly uncertain, the court first performed its own cost-benefit analysis based on the assumption that the EPA prediction was wrong.³⁰⁰ In the court's opinion, if compliance were not feasible, then the costs of denying the suspension would far outweigh the benefits. That is, the court found that the economic costs to society in terms of the stability of the auto industry could be "grave."³⁰¹ On the other hand, the court found that the environmental benefits to society of denying the suspension were likely to be small.³⁰² As a

299. 478 F.2d 615, 641 (emphasis added).

300. *Id.* at 633, 637-41.

301. *Id.* at 633.

302. *Id.* at 633-36. The court was also concerned that a denial of the suspension would actually cause a net *increase* in automobile pollution. A National Academy of Sciences report had indicated several performance costs for automobiles employing pollution control devices raised the price of new cars. The court theorized that consumers might respond by delaying the purchase of new cars, thereby prolonging their use of older cars with less efficient pollution control devices. The resulting mix of cars in use would cause a net increase in emissions. *Id.* at 634 (citing COMM. ON MOTOR VEHICLE EMISSIONS, NAT'L ACADEMY OF SCIENCES, SEMI-ANNUAL REPORT TO THE ENV'T'L PROTECTION AGENCY, January 1, 1972, at 29).

result, the net costs³⁰³ of this scenario appeared to the court to be quite high.

Next, the court proceeded from the assumption that the EPA prediction of technological feasibility was a correct one. It recognized that this would lead to a more uncertain cost-benefit choice, because the economic costs to society of denying the suspension would no longer be large. Those costs would not so clearly outweigh or be outweighed by the modest health benefits. Considering both these scenarios, the court then balanced the *net* costs to society of a wrong prediction by the EPA against the *net* benefits of a correct prediction.³⁰⁴ On balance, the court apparently found that the costs of a wrong prediction on technological feasibility outweighed the benefits of a correct one. Considering this together with a perceived signal in the statute to err on the side of delaying the compliance date,³⁰⁵ the court decided not to uphold the EPA denial of the suspension.

The automaker's request to *grant* the suspension, however, was also denied by the *International Harvester* court. Instead, the court remanded the case to the agency for the statutorily required determination regarding the public interest and good faith.³⁰⁶ The court first directed the EPA to improve the record by considering new technical data the agency had gathered subsequent to its decision and by allowing parties the opportunity for cross-examination on this new matter.³⁰⁷ Thereafter, the court expected the EPA to make the required public interest and good faith determinations by relying on a cost-benefit analysis.

The type of cost-benefit analysis required by the court in *International Harvester* was not a formal, monetized cost-benefit analysis; instead, the court employed one of an integrative nature, taking the full range of monetizable and nonmonetizable costs and benefits into account. In addition to environmental or ecological costs, the court found that even "the symbolic compromise with the goal of a clean environment" was a real cost of granting a suspension and must be accounted for in the agency's decision.³⁰⁸ *International Harvester*, therefore, is a good example of judicial recognition that an agency's

303. The term "net costs" refers to total costs minus total benefits.

304. 478 F.2d 615, 641. See McGarity, *supra* note 199, at 799 n.377 (arguing that this is a decision for the legislature to make).

305. 478 F.2d 615, 648-49.

306. *Id.* at 650.

307. *Id.* at 649.

308. 478 F.2d 615, 641.

decision may be upheld as "reasoned" under all the evidence only if it is based on an integrative weighing of all social, economic, and environmental costs.

These cases serve to illustrate that through the substantial evidence test courts have required cost-benefit analyses in the context of several different types of agency policy decisions as an inherent part of the decisionmaking process. The weight to be given to various factors in the balancing process, however, presumably must be determined by reference to the congressional objectives expressed in the relevant agency's enabling statute.³⁰⁹ Importantly, this form of cost-benefit analysis has been imposed regardless of the lack of an express congressional mandate to use such a criterion. The discussion now turns to a sampling of cases reviewing OSHA standards to illustrate this concept in the context of OSHA rulemaking.

309. The concept of courts requiring agencies to perform broad, integrative cost-benefit analyses, with determination of weights for the various factors to be made by reference to the enabling statutes, is a well-established one. It is illustrated particularly well in cases involving statutes that expressly require the protection of both economic and environmental interests. For example, *Scenic Hudson Preservation Conf. v. FPC*, 354 F.2d 608 (2d Cir. 1965), is a case involving express judicial direction to an agency to balance economic costs against environmental interests. In *Scenic Hudson*, Consolidated Edison Company desired to build a pumped storage hydroelectric facility on the Hudson River north of New York City. Section 10(a) of the Federal Power Act, 16 U.S.C. § 803(a) (1976), required that a license for the project be granted only to a project that, in the Federal Power Commission's judgment, "will be best adapted to a plan for improving or developing a waterway . . . for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, and for other beneficial public uses, including recreational purposes." *Id.* The phrase "recreational purposes" had been held to encompass the conservation of natural resources and the maintenance of natural beauty. *Namekagon Hydro. Co. v. FPC*, 216 F.2d 509, 511-12 (7th Cir. 1954). The statute thus expressly required the Commission to consider economic interests and nonmonetizable environmental interests. The *Scenic Hudson* court found that the Commission's duty was to weigh each factor properly. 354 F.2d 608, 614. A proper weighing necessitated a consideration of all benefits, costs, and alternatives. *Id.* at 620. In granting the license, however, the Commission had ignored an alternative plan for providing extra power by constructing gas turbines in New York City. The gas turbine plan obviated the need for the hydroelectric project; therefore, environmental harm, involving degradation of scenery from the use of above-ground transmission lines, and injury to fish, would be eliminated. In addition, from an economic standpoint, the plan seemed to be equal to or better than the hydroelectric project. The court held that the Commission had a duty to examine the costs and benefits of this plan against those of the hydroelectric project. 354 F.2d at 622-25. In addition, given the economic efficiency of the hydroelectric plant itself, the court found that the Commission at least should have considered incurring the extra expense of using underground transmission lines. "We find no indication that the Commission seriously weighed the *aesthetic* advantages of underground transmission lines against the *economic* disadvantages." *Id.* at 623 (emphasis added). Ultimately, the case was remanded by the court with the admonition that the Commission keep "in mind that, in our affluent society, the [economic] cost of a project is only one of several factors to be considered." *Id.* at 624.

3. Substantial Evidence Review of OSHA Cases: The Requirement of Cost-Benefit Analysis

In *Associated Industries of New York State, Inc. v. United States Dept. of Labor*,³¹⁰ the OSHA standard under review had established a minimum number of lavatories for industrial buildings which was in excess of the number required by New York as well as all other state health codes.³¹¹ The Court of Appeals for the Second Circuit in *Associated Industries* struck down the section 6(b) standard as unsupported by substantial evidence.³¹² Specifically, the court found that the industry's opposition to the standard was substantially justified by the standard's large financial costs³¹³ and that OSHA had presented no evidence justifying such large costs.³¹⁴ Where OSHA proposed a standard more stringent than that required by any state, the court assumed that OSHA must justify the large costs imposed by the standard by comparing them to the benefits the standard would provide.

A logical inference from the *Associated Industries* holding is that, to survive review under the substantial evidence test, an OSHA standard must be based on a broad cost-benefit balancing that includes financial costs as one relevant factor. While the court did not expressly articulate its imposition of integrative cost-benefit analysis, this conclusion is inevitable from the decision. The court, in fact, apparently did not view the requirement of cost-benefit analysis as a radical one; to the contrary, the court seemed to find this requirement to be implicit in a substantial evidence review.

The degree of cost-benefit justification that the *Associated Industries* court would have required, however, is not clear from the opinion. The court held only that the government had "the burden of offering *some* reasoned explanation"³¹⁵ and, therefore, struck down the standard because the government had failed to provide any evidence at all to justify the standard's stringent requirements.³¹⁶ One might speculate that, given the paramount concern for worker health expressed in the Act, OSHA need only have shown a minimal justification for the standard's stringency to enable the standard to withstand substantial evidence review. Regardless of the cost-

310. 487 F.2d 342 (2d Cir. 1973).

311. *Id.* at 351.

312. *Id.* at 354.

313. *Id.*

314. *Id.* at 352-53.

315. *Id.* at 354 (emphasis in original).

316. *Id.* at 352-53.

benefit justification that would have satisfied the court had that question been reached, however, the significance of *Associated Industries* lies in the court's invalidation of an OSHA standard under the substantial evidence test on the basis of a comparison between its health benefits and the large financial costs it imposed on an industry.

*United Parcel Service of Ohio v. OSHRC*³¹⁷ (*UPS*) is a further example of a court implicitly relying on an integrative cost-benefit analysis to review the reasonableness of an OSHA determination. In *UPS*, the company sought review of an Occupational Safety and Health Review Commission³¹⁸ order charging a violation of an OSHA general safety standard for protective footwear.³¹⁹ The standard, promulgated under section 6(b), required employers to adopt the use of protective equipment wherever occupational hazards were reasonably foreseeable.³²⁰

The Review Commission Order had cited the petitioner for not requiring steel-toed safety shoes for its package handlers, effectively ordering all package handlers to be provided with safety shoes at the employer's expense.³²¹ The Court of Appeals for the Eighth Circuit reversed the Commission, holding that it was unreasonable and an abuse of discretion to impose such a requirement.³²² The court based its holding on a broad consideration of the relevant costs and benefits, as it stated:

[I]n view of the nature of petitioner's business, the small sizes of the vast majority of parcels handled, the extremely low incidence of injuries resulting from falling parcels, and the high rate of turnover among the affected employees, we think it unreasonable and an abuse of discretion to require that all of the

317. 570 F.2d 806 (8th Cir. 1978).

318. Congress established the Occupational Safety and Health Review Commission (OSHRC) under section 12 of the Act as an independent three-member body outside the Labor Department to which both employers and employees could appeal the decisions of OSHA. *See* 29 U.S.C. § 661 (1976).

319. 29 C.F.R. § 1910.132(a) (1981).

320. The standard called for employers to adopt the use of protective gear wherever required by the "hazards of processes or environment." *Id.* Courts have interpreted this phrase to mean that employers must provide the gear where workplace hazards are reasonably foreseeable. *See* *Arkansas-Best Freight Sys., Inc. v. OSHRC*, 529 F.2d 649, 655 (8th Cir. 1976).

321. Although the regulation required the employer to furnish the footwear only where the employee did not do so himself, the court observed that, due to the high turnover rate among employees, most would choose not to provide their own footwear. The court found that the cost of the program, therefore, would fall almost entirely on the shoulders of the company. 570 F.2d 806, 812.

322. *Id.*

unloaders and sorters be equipped, either at their expense or at the expense of petitioner, with steel-toed safety shoes.³²³

Thus, even though the overriding concern in the Act is for worker safety, the *UPS* court determined through its own integrative cost-benefit analysis that the costs imposed by this safety standard, as applied to *UPS*, were not justified in light of the expected small increase in worker safety.

The case of *Florida Peach Growers Association v. United States Dept. of Labor*³²⁴ provides a final illustration of judicial recognition of an integrative cost-benefit comparison as a criterion for reviewing the reasonableness of an OSHA standard. In *Florida Peach*, an organization of fruit growers challenged an OSHA emergency temporary standard for pesticides promulgated under section 6(c) of the Act.³²⁵ The standard did not prohibit the use of any pesticides, but instead was designed to protect farmworkers by designating the period during which they were prohibited from entering a sprayed area.³²⁶

First, in determining the scope of review, the Fifth Circuit Court of Appeals observed that substantial evidence review of an emergency temporary standard,³²⁷ similar to that of an OSHA permanent standard promulgated under section 6(b), entails an examination of "whether the Secretary carried out his essentially legislative task in a manner reasonable under the state of the record before him."³²⁸ The court then held that "[t]he promulgation of any standard will depend upon a balance between the protection afforded by the requirement and the effect upon economic and market conditions in the industry."³²⁹ Thus, an integrative cost-benefit analysis emerged as the implicit basis for determining whether the Secretary acted reasonably.

The emergency temporary standard was struck down by the court because the health benefits afforded by the standard did not justify the financial burden placed upon the industry.³³⁰ In striking this balance, however, the court observed that Congress itself had nar-

323. *Id.*

324. 489 F.2d 120 (5th Cir. 1974).

325. *See supra* note 31 (describing OSHA emergency temporary standards).

326. 489 F.2d 120, 122.

327. The court reasoned that because section 6(f) refers to "a standard issued under this section," section 6(c) emergency temporary standards must be included within its scope, and are therefore subject to the substantial evidence test. *Id.* at 128.

328. *Id.* at 129.

329. *Id.* at 130.

330. *Id.* at 129-32.

rowed the scope of the permissible cost-benefit analysis by declaring that only *grave* dangers would justify the issuance of an emergency temporary standard.³³¹ Relying on that statutory signal, the court stated that in general OSHA may issue an emergency temporary standard only when conditions pose an immediate threat of a permanent, rather than a curable, nature.³³² Here, because OSHA could not show the existence of a grave danger to the farmworkers' health, the court struck down the standard as unsupported by substantial evidence.

To summarize the thrust of these cases, under the substantial evidence standard of review courts have recognized that their task in ensuring the reasonableness of an agency's policy decision is to examine whether the decision was based upon a weighing of *all* factors relevant to the decision. An examination of cases both within and outside the context of OSHA has revealed a consensus by courts that an integrative cost-benefit analysis is essential to rational agency decisionmaking, regardless of the lack of an express congressional mandate to use such an analysis. It is important to note that each of the OSHA cases described above found a requirement of cost-benefit analysis not by referring to section 3(8) or section 6(b)(5) of the Act, but by recognizing that cost-benefit analysis is inherent under the Act's mandate to review on the basis of substantial evidence. This article now turns to an examination of the implications of this judicial approach as it applies to the Supreme Court's opinions in *Industrial Union Department v. American Petroleum Institute* and *American Textile Manufacturers Institute v. Donovan*.

D. Reexamination of Industrial Union: Is Cost-Benefit Analysis Required in the Determination of Significant Risk?

In *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, the Supreme Court plurality held that OSHA's threshold finding of significant risk must involve both a finding that

331. *Id.* at 130.

332. *Id.* at 132. In light of the magnitude of the health impairment to the farmworkers, the court's construction that only permanent illnesses could be considered "grave" seems ill-conceived. Studies of the occasional outbreaks of organophosphate poisoning among the farmworkers had revealed symptoms of "nausea, excessive salivation and perspiration, blurred vision, abdominal cramps, vomiting, and diarrhea, in approximately that sequence." *Id.* at 131. The list of outbreaks in the record contained one instance where 94 workers were affected, with a number of workers requiring one or two days of hospitalization. *Id.* at 131, n.18. The court nevertheless found that these dangers were not grave, relying on its findings that a relatively small number of farmworkers were affected, and that these occurrences had been ongoing for a period of several years without any deaths being conclusively attributable to pesticide exposure. *Id.* at 131.

the existing level of health risk is significant and that the health risk will be eliminated or lessened by OSHA's new regulation.³³³ One basic factor that is not expressed clearly in the plurality opinion is whether a risk may be deemed significant solely on the basis of the magnitude of the health impairment it creates, or only by a comparison between the magnitude of the health impairment and its attendant costs of removal. While most commentators³³⁴ have concluded that the plurality in *Industrial Union* had the former interpretation in mind, at least one court³³⁵ and one commentator³³⁶ apparently have come to the opposite conclusion. Thus, whether cost-benefit analysis should be used to ascertain the significance of any risk is undetermined.

The former interpretation, that the significance of a risk turns solely on the magnitude of harm, does not fully comport with the Act's stated objective of maximizing workplace health and safety protection. To understand why, one must first consider health or safety risks which are too small to be considered significant, but which are nevertheless very inexpensive either to eliminate or reduce.³³⁷ Under the magnitude of risk interpretation, OSHA would have no authority to regulate these hazards at all, because of the lack of a significant risk. Such a result seems incompatible, however, with congressional intent to protect worker safety and health "so far as possible."³³⁸

Conversely, the regulation of risks which *do* exist at a magnitude considered to be significant also may be incompatible with congressional purposes. If OSHA is required to regulate these hazards as stringently as economically feasible, as is now required by *ATMI*, the result could be counterproductive to the goal of maximizing

333. 448 U.S. 607, 642 (1980). See *supra* text and notes at notes 85-97.

334. See *supra* commentators listed at note 210.

335. In *Mueller v. Jeffrey Mfg. Co.*, 494 F. Supp. 275 (E.D. Pa. 1980), the court, in discussing an employer's duty regarding a hole in a floor which an employee had fallen through, held that the employer "had a duty to keep the workplace safe and free from *unreasonable danger and unnecessary risk*." *Id.* at 278 (emphasis added), citing *Industrial Union*. This decision shows that courts may read the significant risk requirement of *Industrial Union* as a signal to perform a tort law based balancing of costs and benefits.

336. See *Roberts & Kossek*, *supra* note 225, at 469 ("By requiring hazards to be 'significant' and giving the example of the possible acceptability of the one-in-one billion risk as opposed to the one-in-one thousand risk, the Court is saying that regulation must make some economic sense").

337. See *MacCarthy*, *supra* note 1, at 812 n.98 ("The idea that risks with no benefits and easily avoidable risks should be eliminated regardless of their size is a staple of the risk assessment literature").

338. 29 U.S.C. § 651(b) (1976).

workplace health and safety, in that it would cause a misallocation of resources. Justice Powell made this argument in his concurring opinion in *Industrial Union*.³³⁹ Justice Powell hypothesized a situation in which OSHA is forced to cause the depletion of an industry's resources in an effort to reduce a single risk by some speculative amount, even though other significant risks would remain unregulated. Given that society has a limited amount of resources to spend on workplace health and safety, Justice Powell argued that interpreting the Act to prohibit OSHA from *any* consideration of how those resources might be most productively spent runs counter to the Act's objectives.³⁴⁰

Alternatively, if the courts were to compel OSHA to give at least *some* consideration to financial costs, the agency would be able to rectify these problems. First, OSHA would be able to regulate, in economically appropriate situations, risks which are now considered insignificant. Second, the agency would be able to promulgate regulations that take into account considerations of how industrial resources can best be allocated to maximize worker safety and health. Thus, some accounting of the costs of regulation could actually foster the goals articulated in the Act.

The *Industrial Union* plurality struck down OSHA's benzene standard ostensibly because of the agency's failure to amass enough evidence to satisfy the significant risk test.³⁴¹ A close examination of the opinion, however, reveals that the plurality was in fact swayed by considerations of cost to the industry. The plurality called the benzene standard "an expensive way of providing some additional protection for a *relatively* small number of employees."³⁴² Thus, relativity, or a balance, was central to the Court's concern.³⁴³ Fur-

339. 448 U.S. 607, 664-71.

340. Justice Powell observed that OSHA's use of this procedure would be "self-defeating," by forcing OSHA to "regulate in a manner inconsistent with the important health and safety purposes of the [Act]." *Id.* at 669-70. A standard setting process which ignores economic considerations completely, in Justice Powell's opinion, "would result in a serious misallocation of resources and a lower effective level of safety than could be achieved under standards set with reference to the comparative benefits available at a lower cost." *Id.* at 670. The *ATMI* majority disposed of this concern by reference to section 6(g) of the Act, 29 U.S.C. § 655(g), which directs the Secretary to select the gravest risks for earliest regulation. *Am. Textile Mfr. Inst. v. Donovan*, 452 U.S. 490, 509 n.29 (1981). Justice Powell, however, disagreed that section 6(g) would solve the problem of resource misallocation. 448 U.S. 607, 670.

341. *See supra* text and notes at notes 96-97.

342. 448 U.S. 607, 628 (emphasis added).

343. *See also id.* at 630 ("Although OSHA did not quantify the benefits to each category of worker in terms of decreased exposure to benzene, it appears from the economic impact study done at OSHA's direction that those benefits may be *relatively* small") (emphasis added).

ther language by the plurality indicated its concern that the benzene standard did not make economic sense: the plurality noted that the industry's data, although disputed, indicated that the standard would prevent at most only two deaths every six years; yet, the standard would require expenditures of one-half billion dollars over that period.³⁴⁴ The Court, therefore, did not advocate regulation solely on the basis of the magnitude of the harm, but took into account both the benefits and costs of the proposed benzene standard.

One commentator, noting these signals in the plurality's opinion, concluded that the Supreme Court deliberately created the section 3(8) significant risk requirement to camouflage its own application of cost-benefit analysis. It was this commentator's opinion that the Court did not want to go on record as favoring cost-benefit analysis for fear of unfavorable public opinion.³⁴⁵ One can, however, take a less cynical view of the matter. Under substantial evidence review as outlined above, the Court may have expected some balancing by OSHA of the costs of the benzene standard to industry against its predicted health benefits.³⁴⁶ The Court may have found inescapable the conclusion that OSHA's benzene standard could not survive substantial evidence review as a reasonable decision unless it had been formulated upon a consideration of financial costs as one factor relevant to the decision. The Court, therefore, implied that the significance of a risk turns on, among other factors, its financial costs of removal.

This viewpoint implied by the plurality was adopted expressly by Justice Powell in his concurring opinion in *Industrial Union*. Justice Powell felt that under the Act, OSHA should be required to show that "the economic effects of its standard bear a reasonable relationship to the expected benefits."³⁴⁷ By focusing on the reasonable relationship standard between costs and benefits, Justice Powell was calling for an integrative cost-benefit analysis. He further concluded

344. *Id.* at 628-29, 653-54. In addition, the plurality was concerned that the huge expense of the standard would provide benefits for only 35,000 employees, in terms of reducing their exposure to benzene. *Id.* at 629. Justice Stevens noted that "the Government's theory would give OSHA power to impose enormous costs that might produce little, if any, discernible benefit." *Id.* at 645.

345. Note, *The Billion Dollar Benzene Blunder: Supreme Court Scrutinizes OSHA Standards in Industrial Union Department, AFL-CIO v. American Petroleum Institute*, 16 *TULSA L.J.* 252, 283 (1980).

346. Indeed, Justice Stevens alluded to this concept during oral argument in the *ATMI* case. In reference to section 6(g) of the Act, which requires the Secretary to set priorities for establishing section 6(b) standards, Justice Stevens had remarked that a weighing of costs and benefits is inherent in the decisionmaking process. See 49 *U.S.L.W.* 3524 (1981).

347. 448 *U.S.* 607, 667.

that a health standard which satisfies this type of cost-benefit analysis automatically satisfies a showing of significant risk, because the significance of a risk depends in part on its financial costs of removal:

OSHA found — at least generally — that the hazards of benzene exposure at currently permissible levels are serious enough to justify an expenditure of hundreds of millions of dollars. For me, that finding necessarily subsumes the conclusion that the health risk is ‘significant.’ If OSHA’s conclusion is supported by substantial evidence, the threshold requirement discussed in the plurality opinion would be satisfied.³⁴⁸

In Justice Powell’s opinion, therefore, the test of significant risk is inextricably linked with a cost-benefit analysis.

Examining the parameters of his postulated cost-benefit analysis requirement, Justice Powell then analyzed OSHA’s finding that the costs of the new benzene standard were justified in light of its “appreciable” health benefits.³⁴⁹ On one hand, Justice Powell rejected the appeals court’s conclusion that the Act requires quantification of risk in every case.³⁵⁰ Instead, he found that the directive of section 6(b)(5) to regulate on the basis of the “best available evidence” implies that OSHA’s hands are not to be tied when the risk cannot be reasonably quantified by any known method.³⁵¹ On the other hand, even assuming that OSHA’s virtually nonexistent quantification was acceptable under the section 6(b)(5) best available evidence provision, Justice Powell rejected OSHA’s conclusion that the standard in question satisfied a cost-benefit test. In his opinion, OSHA had not adequately documented in the record its method of performing the cost-benefit analysis, including a showing that the agency had weighed all relevant considerations.³⁵²

In calling for an integrative cost-benefit analysis, Justice Powell apparently realized that under the substantial evidence standard OSHA must consider all relevant factors, including the factor of financial costs, as a fundamental requirement of rational decision-making. Moreover, Justice Powell was correct in calling for only a “reasonable relationship” between costs and benefits,³⁵³ focusing his concern on only those health standards requiring expenditures

348. *Id.* at 666.

349. 43 Fed. Reg. 5941 (1978).

350. 448 U.S. 607, 666.

351. *Id.*

352. *Id.* at 670-71.

353. *Id.* at 667.

"wholly disproportionate" to the expected health benefits.³⁵⁴ This formulation accurately reflects the primary concern for worker health and safety expressed by Congress in the Act. Overall, Justice Powell's interpretation of the Act, therefore, would create a rulemaking scheme which is more in line with achieving the Act's objectives than the plurality's confusing procedure appears to be.

The Supreme Court's subsequent decision in *American Textile Manufacturers Institute v. Donovan* took corrective steps towards providing greater consistency between OSHA's rulemaking procedures and the goals of the Act. Nevertheless, as described below, by overlooking the role of integrative cost-benefit analysis under the substantial evidence test and Justice Powell's outline of its relevance to OSHA rulemaking, the Court unfortunately failed to establish an optimal system for achieving those objectives.

E. Reexamination of ATMI: What Remains of Cost-Benefit Analysis in the Occupational Safety and Health Act?

In *American Textile Manufacturers Institute v. Donovan*, the Supreme Court construed section 6(b)(5)'s directive that no employee suffer impairment of health, coupled with its limitation that standards be feasible, to be a specific congressional directive precluding the use of cost-benefit analysis by OSHA in setting exposure levels for toxic substances.³⁵⁵ While the effect of this construction on OSHA's rulemaking procedures may be a salutary one, the Court did not provide an optimal construction of section 6(b)(5) in terms of establishing rulemaking procedures in line with the goals of the Act. Evidence of Congress' intent to place primary concern on worker health, Congress' failure to use its usual methods of providing for cost-benefit analysis,³⁵⁶ and the ordinary meaning of the

354. *Id.*

355. See *supra* text and notes at notes 135-57.

356. It has been argued that this observation is valid with respect to only monetized cost-benefit analysis: "Legally, it can be argued that the Act does not require *strict* cost-benefit analysis. When Congress wanted *strict* cost-benefit analysis, it knew how to clearly put the requirement into its enactments. Yet the legislative history is replete with concern about costs and the Act requires certain economic calculations." Roberts & Kossek, *supra* note 225, at 469 (emphasis added). In addition, one other commentator has noted that the use of congressional silence to signal a presumption against the use of cost-benefit analysis only will obtain where, as with OSHA, a strong congressional objective running contrary to the use of cost-benefit analysis appears in the agency's enabling statute. Diver, *Policymaking Paradigms in Administrative Law*, 95 HARV. L. REV. 393, 428 (1981). Therefore, although future courts may use the ATMI construction of the term "feasible" to clarify analogous terms in other statutes, see *The Supreme Court, 1980 Term*, 95 HARV. L. REV. 319, 325-26 (1981), courts should bear in mind that this construction of the term "feasible" may be confined to the narrow context of

word "feasible" all lend support to a conclusion that financial costs of OSHA's health standards should be given very little weight under the Act. The *ATMI* Court, however, overshot the mark by interpreting these factors to signal the preclusion of *any* comparison between the costs and benefits of proposed health standards.³⁵⁷

If the Court in *ATMI* intended an outright ban on strict *monetized* cost-benefit analysis, then the Court was correct. The problems associated with monetized cost-benefit analysis as applied to decisionmaking in the health and environmental sphere militate against its application by OSHA. The Court, however, should have recognized the fundamental role for an integrative type of cost-benefit analysis that implicitly is required under the substantial evidence test. To the extent that this form of cost-benefit analysis can be applied consistently with the *ATMI* opinion, it should be recognized in the future.

Future courts reviewing OSHA health standards, however, undoubtedly will construe the *ATMI* holding literally; that is, courts will no longer allow OSHA to consider a comparison between financial costs and health benefits at all in either the determination of significant risk, or in the setting of exposure levels to toxic substances. Instead, OSHA now will be required to impose a reduction of toxic substance levels to the maximum extent economically or technologically achievable by industry. In the process, OSHA may even find its proposed health standards challenged by employee unions, on the grounds that a standard is not strict enough because the regulated industry has room to absorb further compliance costs before being pushed to the brink of economic destruction.

The *ATMI* holding also does not resolve the present confusion over the precise meaning of "significant risk," the first prong of the test of OSHA's regulatory capability. Substantial evidence review, along with the *Industrial Union* opinion itself, suggests that inherent in a rational determination of significant risk is a comparison of the risk with its associated economic costs of removal. Yet, after *ATMI*, OSHA can no longer consider economic costs in comparison to health benefits when determining the significance of a risk. Accepting the *Industrial Union* plurality's example that a one-in-one billion risk of death is not significant,³⁵⁸ the question remains as to how OSHA is

OSHA, because of the strong statutory objectives that the term is tied to in the context of the Act.

357. For a conclusion that the *ATMI* Court's construction of section 6(b)(5) was correct, see *The Supreme Court, 1980 Term*, 95 HARV. L. REV. 319, 324 (1981).

358. 448 U.S. 607, 655.

to determine that such a risk is insignificant if not on the basis that it makes no economic sense to reduce it.³⁵⁹ Furthermore, the possibility exists that the agency may rely on a cost-benefit analysis in its determination of significant risk without stating so. Such a procedure is detrimental to a system of responsible agency decisionmaking. OSHA should be held accountable with respect to each factor it has considered relevant to its health and safety determinations.³⁶⁰

To reconcile the holdings of *Industrial Union* and *ATMI*, it is reasonable to conclude that the Act does not prohibit *all* comparisons of costs and benefits in setting the level of toxic substance standards. Under this proposed interpretation, OSHA would first be required to consider financial costs in its determination of significant risk. This consideration would be part of an integrative, rather than a monetized, cost-benefit analysis; financial costs, therefore, would be only one of several monetizable and nonmonetizable factors under consideration. OSHA would be required to show only a reasonable relationship between all costs and benefits, in the manner endorsed by Justice Powell.³⁶¹ Because the cost-benefit analysis would be of an integrative type, no mathematically precise showing of net benefit levels would be required; the agency would be held only to a *consideration* of costs. Furthermore, to comport with the overall policies of the Act, reviewing courts would affirm the low priority to be given financial costs in the balancing process by invalidating only toxic substance regulations that impose financial costs wholly disproportionate to expected health benefits, as suggested by Justice Powell.³⁶² Such a system would satisfy the fundamental requirements of the substantial evidence test. In addition, this system would placate Justice Powell's concerns over a misallocation of societal resources by allowing OSHA to take that factor into consideration. The second prong of this proposed procedure would entail the implementation by OSHA of the *ATMI* feasibility test. As with the significant risk test, the feasibility test would be adjusted to allow

359. See Roberts & Kossek, *supra* note 225, at 469.

360. Justice Powell voiced this concern in his *Industrial Union* concurrence: "No rational system of regulation can permit its administrators to make policy judgments without explaining how their decisions effectuate the purposes of the governing law . . ." 448 U.S. 607, 670. Baram, *supra* note 1 at 486, similarly states that "responsible decisionmaking demands that implicit valuations be acknowledged and addressed explicitly." Baram also argues that the use of cost-benefit analysis should not be by unaccountable analysis at all, but should be by Congress or other publicly accountable officials in order to ensure that it is responsibly employed. *Id.* at 525.

361. See *supra* text and notes at notes 347-54.

362. See *supra* text and note at note 354.

OSHA to give some, though minimal, consideration to a standard's economic costs. An OSHA procedure which incorporates an integrative cost-benefit analysis would both comply with the essential holdings of *Industrial Union* and *ATMI*, and promote the successful achievement of the Act's overall goals.

The *ATMI* decision also complicates the question of whether OSHA need engage in cost-benefit analysis to justify its safety standards. Because OSHA's safety standards are not subject to the feasibility requirement of section 6(b)(5), it will remain possible in the future for industries to claim that cost-benefit analysis is required either under section 3(8) alone, or as inherent in the Act's directives to the agency under the substantial evidence test.³⁶³ It seems valid to conclude that Congress made few distinctions between safety and health in its quest to protect the worker, despite its application of the phrase "to the extent feasible" to health standards only.³⁶⁴ The integrative cost-benefit system proposed above for health standards, therefore, should also be applied to safety standards. OSHA should be allowed to consider, on a low priority basis, the financial costs of safety standards in the determination of significant risk, as well as in the determination of the scope of the standard itself.

It makes sense to hold OSHA only minimally accountable for a consideration of financial costs. Under this system, courts would generally defer to the agency's expertise in weighing the factors relevant to an integrative cost-benefit analysis. Courts would, however, be able to vacate OSHA regulations that are extremely unjustified economically. In the future, therefore, courts should distinguish between the monetized and integrative forms of cost-benefit analysis and require OSHA's determinations for both health and safety regulations to be premised on integrative cost-benefit analyses as part of the agency's mandate to make rational policy decisions.

V. CONCLUSION

The question whether cost-benefit analysis should play a role in OSHA's regulatory procedures has been a difficult one for the courts. Congress designed the Occupational Safety and Health Act

363. Even without reference to section 3(8), OSHA may find its safety standards struck down for lack of a cost-benefit justification under the substantial evidence test. *See supra* text and notes at notes 310-16 (discussing *Assoc. Ind. of N.Y. v. United States Dep't of Labor*, 487 F.2d 342 (2d Cir. 1973)).

364. *See supra* text and notes at notes 179-204.

of 1970 to protect workers as much as possible against workplace health and safety hazards. Nevertheless, the Act's framers realized that, because of technological and economic constraints, workplaces cannot be made risk-free. While the Act itself does not call for cost-benefit analysis, many people have cited the Act as imposing on OSHA the requirement of balancing the economic costs of regulations against the expected health and safety benefits to workers. These proponents of cost-benefit analysis have pointed to pragmatic language in the Act contained in both the section 3(8) reasonably necessary requirement and the section 6(b)(5) feasibility requirement. Adding to the confusion over whether cost-benefit analysis is appropriate under OSHA has been a disagreement over the meaning of the term itself. While some observers contend that cost-benefit analysis applies only to a fully monetized exercise, others emphasize the value of comparing costs and benefits even when there are no market prices available to monetize, for instance, relevant health or environmental interests. Thus, the confusion over the application of cost-benefit analysis to OSHA regulations has been considerable.

Recently, the Supreme Court rendered two decisions bearing on the role of cost-benefit analysis under OSHA. In *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, the Court held that, under the requirements of section 3(8), OSHA may not regulate a particular health or safety hazard at all unless the hazard presents a significant risk of harm. In addition, for the limited category of toxic substance standards, the Court in *American Textile Manufacturers Institute v. Donovan* held that OSHA's standards must eliminate all risk of material health impairment within the limits of economic and technological feasibility, which precludes the use of cost-benefit analysis.

Despite the Supreme Court's recent pronouncements, several questions remain unanswered in this area. One major question is whether cost-benefit analysis is an appropriate criterion for setting safety standards under the Act. The *ATMI* Court expressly left this question open. A broad reading of the *ATMI* opinion, however, suggests that courts in the future may interpret the Act so as to preclude cost-benefit analysis for safety standards as well as for health standards. An analysis of congressional intent reveals that future courts would be correct in making no differentiation between health and safety standards when determining the extent to which OSHA may consider financial costs in its standard setting process.

In addition, the question remains unanswered as to how OSHA, or the courts, can determine that a risk is not significant. Although the

Industrial Union plurality did not expressly call for a consideration of economic costs in the determination of significant risk, the plurality's language indicated that such a consideration would be appropriate. This construction of the significant risk requirement aligns more closely with the Act's objectives than would a construction focusing only on the magnitude of the risk itself. As such, under the Act no health or safety risk should be deemed insignificant unless it is too expensive to reduce. Future courts, however, undoubtedly will read the *ATMI* opinion as prohibiting any type of cost-benefit analysis under OSHA, even as applied to the determination of the significant risk threshold.

To provide a more cohesive reading of the two Supreme Court opinions, this article has investigated the overall role that economic and social costs have played, and may play in the future, in the promulgation of health and safety standards. An analysis of opinions reviewing OSHA standards, as well as those reviewing the policy decisions of other administrative agencies, has revealed the conclusion by courts that the substantial evidence test inherently contemplates an integrative cost-benefit weighing as an essential element of rational agency decisionmaking. Integrative cost-benefit analysis has been relied on by courts where full monetization of relevant factors is not possible; where, as with OSHA, a government agency is created expressly to make policy decisions which by their nature cannot be exclusively based on quantifiable elements. Presumably, however, an integrative cost-benefit analysis under the substantial evidence test must be keyed to the legislative policy goals expressed in the agency's enabling statute. In OSHA's case, health and safety risks should be heavily weighted with respect to the financial costs of reducing those risks in the context of an integrative cost-benefit analysis.

This proposed system would provide a coherent legal framework in which to view both Justice Powell's expressed view and the *Industrial Union* plurality's implied view that the Act allows cost-benefit analyses of both health and safety standards on a limited basis. On one hand, courts would to a great extent defer to OSHA's determination of costs and benefits because of the agency's expertise in the area and the Act's clear mandate to err on the side of protecting the worker. In reviewing OSHA determinations of significant risk and feasibility, however, courts would allow, or in appropriate cases require, the agency to consider the financial costs of standards against the related benefits. This action would be appropriate in cases where a reduction of risk to the maximum extent

achievable by industry would be extremely detrimental in an economic sense.

Economic realities demand that the financial costs of OSHA's regulations be somehow accounted for by OSHA and reviewable by the courts, if only to provide a check on those regulations which, as described by the *Industrial Union* plurality, are extremely unjustified economically. The approach of substantial evidence review outlined above reveals that, on a limited basis, OSHA should account for financial costs by using integrative rather than monetized cost-benefit analysis in its determinations. Such a procedure would ensure OSHA's faithful adherence to the balanced legislative objective of providing maximum worker health and safety protection within the bounds of economic reality.