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SAFETY LAW—OCCUPATIONAL SAFETY AND HEALTH—THE BENZENE CASE: LIFE, LIBERTY AND THE PURSUIT OF HEALTH—Industrial Union Department, AFL-CIO v. American Petroleum Institute, 100 S. Ct. 2844 (1980)

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SAFETY LAW— OCCUPATIONAL SAFETY AND HEALTH—THE *BENZENE CASE: LIFE, LIBERTY AND THE PURSUIT OF HEALTH—Industrial Union Department, AFL-CIO v. American Petroleum Institute*, 100 S. Ct. 2844 (1980).

I. INTRODUCTION

“If you win this case, somebody may die as a result.”¹ With that piercing statement at oral argument, United States Supreme Court Justice John Paul Stevens drew the bottom line in one of the major cases decided by the Supreme Court in 1980, *Industrial Union Department, AFL-CIO v. American Petroleum Institute*,² commonly known as the *Benzene Case*.

To protect workers' health, in 1978 the Secretary of Labor set a health standard reducing the maximum permissible benzene exposure level from its previous level. American Petroleum Institute (API), the respondent in the *Benzene Case*, objected to this more stringent standard and challenged its validity in the United States Court of Appeals for the Fifth Circuit.³ API convinced that court that the Occupational Safety and Health Administration (OSHA) must balance the costs of a proposed health standard against the benefits expected to be derived from its implementation before promulgating a regulation. Applying the balancing test, the Fifth Circuit held that OSHA had not demonstrated that workers would enjoy measurable benefits from a lower exposure level to benzene. The costs involved in implementing the standard consequently could not be justified by its benefits.

The Supreme Court, in affirming the lower court, set up a two-part test for carcinogen regulation cases. The first prong of the Supreme Court's test requires the Secretary to demonstrate the existence of a significant risk to employee health. The second prong deals with the existence of a cost-benefit test. Since the Court held that OSHA had failed the first part of the test by failing to show

1. 48 U.S.L.W. 3329 (Nov. 20, 1979).

2. 100 S. Ct. 2844 (1980).

3. *American Petroleum Inst. v. OSHA*, 581 F.2d 493 (5th Cir. 1978), *rev'd*, 100 S. Ct. at 2844. Appeals by persons adversely affected by an Occupational Safety & Health Administration [hereinafter referred to as OSHA] regulation are taken directly to the United States circuit courts under 29 U.S.C. § 660(a) (1976).

that a significant risk was presented to employee health, the Court never reached the cost-benefit issue.⁴

This note will explore the source and legal propriety of the cost-benefit balancing test which the Fifth Circuit used to overturn OSHA's benzene standard. The significance of the Supreme Court's refusal to deal with the cost-benefit issue will be addressed. This note also will discuss whether the Secretary of Labor can ever amass sufficient evidence of a proposed standard's beneficial effects to justify the compliance costs. If too burdensome a test is set, OSHA, as well as other protection agencies, may be stifled in its efforts to provide maximum feasible safety for employees.

II. THE OSHA STANDARD

On February 10, 1978, the Secretary of Labor, under the authority of the Occupational Safety and Health Act⁵ (the Act), promulgated a health standard⁶ for occupational exposure to benzene which set the maximum exposure level to an airborne concentration of benzene at one part of benzene per million parts of air (1 ppm) averaged over an eight-hour day.⁷ The previous mandatory standard, adopted by OSHA in 1971, provided for a maximum exposure level of 10 ppm averaged over an eight-hour day.⁸ The Secretary recommended this decrease in the permissible exposure level in response to the release of several studies⁹ conducted dur-

4. 100 S. Ct. at 2850.

5. 29 U.S.C. §§ 651-678 (1976) (hereinafter referred to as the Act).

6. *Id.* § 655.

7. The standard is codified at 29 C.F.R. § 1910.1028 (1978); the air-borne exposure levels may be found at (c)(1). The Occupational Safety and Health Commission's reasons for supporting the standard are published at 43 Fed. Reg. 597-170 (1978). The permanent standard also requires monitoring of exposure levels and forces employers to advise employees about their exposure levels. 29 C.F.R. § 1910.1028(c) (1979). Employers must implement engineering controls to bring exposures within permissible limits or to the lowest level possible. Until then, employees must wear respirators. *Id.* § 1910.1028(f). The standard also requires labeling of products containing benzene and medical surveillance of employees. *Id.* § 1910.1028(i), (k). Direct skin and eye contact with liquid containing benzene is prohibited and protective clothing must be provided to employees who are likely to be exposed to such liquids. *Id.* § 1910.1028(c)(2), (h).

8. *Id.* § 1910.1000, at Table Z-2.

9. One study was reported in 1975 by Dr. Enrico Vigliani. In 1963 he participated in a study of Italian rotogravure workers exposed to inks, resins, varnishes, and glues containing benzene concentrations between 200 and 400 parts per million (ppm), with peaks up to 1500 ppm. Also studied were Italian shoe workers, whose work environments contained concentrations of benzene ranging between 200 and

ing the early 1970's which reported a significantly increased risk of leukemia among workers exposed to high levels of benzene. These studies concluded that benzene is a leukemogen, a substance that tends to induce the development of leukemia.¹⁰ On the basis of empirical tests, the studies estimated that the risk of leukemia among workers exposed to substances containing various amounts of benzene was from two to twenty times greater than that of the general population.

API, which is composed of producers and users¹¹ of benzene and products containing benzene, and various industrial institutes, on behalf of themselves and their member companies, filed petitions in the United States Court of Appeals for the Fifth Circuit in March 1978 challenging the validity of OSHA's permanent 1 ppm

500 ppm. He identified the risk of leukemia among these workers as 20 times greater than that of the general population. A 1975 review showed that after the solvent toluene was substituted for benzene in 1964, no new cases of leukemia among workers in the rotogravure industry were discovered. *See* 100 S. Ct. at 2853 n.12 (citing Vigliani, *Leukemia Associated with Benzene Exposure*, 271 ANN. N.Y. ACAD. SCI. 143 (1976)).

Another study was reported in 1972 by Dr. Muzaffer Aksoy, a hematologist who is currently a professor at Istanbul University. He testified at the rulemaking hearing that his study reported four leukemia deaths among Turkish shoemakers caused by exposure to benzene concentrations in excess of 150 ppm for periods ranging from 6 to 14 years. He estimated that the incidence of leukemia among the sample he studied was twice that which would have been expected for the population as a whole. Like Dr. Vigliani, Dr. Aksoy also noted a decline in the number of leukemia cases after other solvents were substituted for benzene. *See American Petroleum Inst. v. OSHA*, 581 F.2d at 498 n.13.

The third study, the one most heavily relied upon by OSHA, was reported in 1977 by Dr. Peter Infante of the National Institute for Occupational Safety and Health [hereinafter referred to as NIOSH], a body created to conduct research and to recommend occupational safety and health standards to OSHA. *See* 29 U.S.C. §§ 669-671 (1976). Dr. Infante testified extensively at the hearing concerning his retrospective epidemiological study of leukemia among workers exposed to benzene while employed in the production of natural rubber cast film at Goodyear's Akron, Ohio and St. Mary's, Ohio plants between 1940 and 1949. He found that the risk of death from leukemia was five times that of two control groups not exposed to benzene. No specific exposure level during the period studied could be definitely established, but it was estimated at approximately 100 ppm with occasional levels as high as several hundred parts per million.

10. A leukemogen is any substance which precipitates or increases the risk of contracting leukemia. WEBSTER'S THIRD NEW INT'L DICTIONARY 1299 (1971).

11. The producers are engaged in the petrochemical and petroleum refining industries and are responsible for 94% of the total domestic benzene production while the steel industry produces the remaining 6% as a by-product of the coking process. The users of benzene include the chemical, printing, lithograph, rubber cement, rubber fabricating, paint, varnish, stain remover, adhesive, and petroleum industries. 581 F.2d at 498.

benzene standard.¹² The Fifth Circuit overturned the standard because it was unsupported by substantial evidence in the record.¹³ The court found no substantial evidence to support the Secretary's conclusion that the 1 ppm standard would result in measurable benefits by reducing risks to human health. In other words, there was no proof that any lives would be saved.¹⁴ The Act was construed to require the Secretary to engage in a formal, but not elaborate, cost-benefit analysis prior to ordering reduced exposure to toxic chemicals.¹⁵ While agreeing with OSHA that substantial evidence¹⁶ supported the conclusion that benzene caused leukemia in humans, the court held that OSHA had not sustained its burden of showing that a reduced standard would produce measurable benefits.¹⁷

The United States Supreme Court, in a five-to-four decision, affirmed the Fifth Circuit decision, but the majority never reached the question of whether a cost-benefit balancing test is required by the Act. One concurring Justice held that such a test was implied in the OSHA statute.¹⁸ The four dissenting Justices felt that Congress never contemplated a cost-benefit test and that such a balancing test could not be derived from the complicated Occupational Safety and Health Act.

Since the Supreme Court reserved judgment on the Fifth Circuit's holding that the Secretary must roughly balance the costs of compliance with a toxic substance health standard against the benefits expected to be derived from its implementation, the fundamental issue of whether such a test is implied in the Act remains open. This issue can be resolved only by analyzing the purposes of the Act and the historical relationship between OSHA and benzene.

12. Other intervenors or original petitioners were transferred to the Fifth Circuit for review. *Id.* at 499. The Industrial Union Department and the AFL-CIO intervened on behalf of OSHA in support of this standard.

Petitioners filed a motion on March 10, 1978, for a temporary stay of the standard. On April 18, 1978, a three-judge panel heard oral arguments and ordered a stay of the standard to be continued pending dispositions of the petitions for review. *Id.* at 500.

13. *Id.* at 510.

14. *Id.* at 503. This reflects the court's great concern about the costs to the petroleum industry.

15. *Id.* The court apparently wanted OSHA to ascertain the number of deaths which would occur at the 10 ppm exposure level and subtract the number that would occur at a 1 ppm exposure level in order to arrive at a concrete estimate of how many lives would be saved.

16. See note 174 *infra*.

17. 581 F.2d at 505.

18. 100 S. Ct. at 2877 (Powell, J., concurring).

III. BACKGROUND

A. *History of Benzene*

Benzene¹⁹ is a ubiquitous hydrocarbon compound that is manufactured in substantial quantities²⁰ by the petroleum and steel industries for a wide variety of industrial uses.²¹ Benzene has been recognized since 1900 as a toxic substance capable of causing acute or chronic nonmalignant abnormalities in the formed elements in the human blood system. When benzene vapors are inhaled, the benzene diffuses rapidly through the lungs and is absorbed quickly into the blood.

The acute effects of exposure to high concentrations of benzene are well known. Exposure to a 20,000 ppm concentration is often fatal within minutes, causing circulatory failure or coma.²² Long-term exposures to high concentrations at 40 to 500 ppm can cause bone marrow depression, vertigo, nervous excitation, headache, nausea, and breathlessness.²³ The most common nonmalignant effect of continuous exposure to benzene concentrations between 25 and 40 ppm²⁴ is malfunctioning of the bone marrow,²⁵ resulting in a deficiency in the formed elements of the blood.²⁶ Ex-

19. Benzene (C₆H₆) is a clear, colorless, noncorrosive, highly flammable liquid with a strong, rather pleasant odor. Benzene occurs naturally in small quantities (a few parts per billion) in certain substances, such as water supplies, animal and plant matter, many foods, crude oil, and the ambient air. Brief for American Petroleum Inst. at 6, *Industrial Union Dep't, AFL-CIO v. American Petroleum Inst.*, 100 S. Ct. at 2844.

20. The production of benzene is rapidly expanding in the United States. Only 11 other chemicals and only one other hydrocarbon, ethylene, are presently being produced in greater tonnage. 43 Fed. Reg. 5918 (1978).

21. The majority of the benzene produced is used as a feedstock in the manufacture of other organic chemicals. The remaining amounts are used in the manufacture of pesticides, detergents, solvents, paint removers, and as a reactant in chemical laboratories. Motor fuels such as gasoline contain up to two percent benzene. 581 F.2d at 498.

22. *See, e.g.*, 42 Fed. Reg. 27,467 (1977).

23. This moderate level can also produce less severe blood abnormalities. *See, e.g.*, 43 Fed. Reg. 5921-22 (1978); 42 Fed. Reg. 27,467 (1977).

24. This level may be considered "low." 43 Fed. Reg. 5924-25 (1978).

25. Blood cells are produced in the bone marrow and exposure to benzene results in an alteration of the body's rate of production of red and white cells and platelets. Brief for the Secretary of Labor at 10, *American Petroleum Inst. v. OSHA*, 581 F.2d at 493.

26. Anemia, a decline in the red blood cell count, results in a decreased capacity to carry oxygen to various parts of the body and is characterized by simple fatigue. If undetected, the disease may develop into a more serious condition which exacerbates other diseases. Leukopenia, a decline in the white blood cell count, re-

posure to benzene at 25 to 40 ppm also results in chromosomal aberrations.²⁷ Because of extensive evidence linking benzene with these noncancerous diseases of the blood, the American National Standards Institute decided in 1969 to set the permissible exposure level to benzene at 10 ppm.²⁸ That was the most recent reduction in the permissible exposure level prior to the promulgation of the Secretary's contested benzene standard.

The undisputed relationship between benzene and leukemia can be stated simply: exposure to concentrations of benzene at levels higher than 100 ppm causes leukemia in humans.²⁹ Proving this relationship, however, is complicated by two factors. First, there may be a considerable "lag" time or latency period between exposure to benzene and the development of the disease. Second, some individual workers may be particularly sensitive to the leukemogenic effects of benzene, thus making determination of a "safe" exposure level very difficult, if not impossible.³⁰ As a result of its toxicity, recommended exposure levels to benzene have been reduced constantly throughout the chemical's history.³¹ The Secretary relied on the bleak historical background of benzene as well as on the legislative history of the Act to reach his decision to lower the permissible exposure level to 1 ppm.

duces the capacity of the body's immunological defense system and results in recurrent infections. Thrombocytopenia, a decline in the platelet count, leads to impaired clotting of the blood and is characterized by bleeding tendencies. *Id.* at 11.

27. Benzene exposure causes visible damage to chromosomes in lymphocytes and in blood-forming cells. These effects may be manifested as alterations in the numbers of chromosomes or structural rearrangement of the chromosomal material, including additions or deletions of chromosomes. These changes have been observed in workers exposed to low levels of benzene. *Id.* at 10 n.6.

28. 43 Fed. Reg. 5921-25 (1978). OSHA subsequently adopted this standard in 1971 pursuant to 29 U.S.C. § 655(a) (1976). It is codified at 29 C.F.R. § 1910.1000, Table Z-2 (1979). The standard was, however, not based on the possible leukemogenic effects of benzene. 42 Fed. Reg. 22,517 (1977).

29. Leukemia is a neoplasm, or cancer, of the white blood cells characterized by the appearance of abnormal, immature white cells in the circulating blood, by almost total replacement of the bone marrow with the leukemic cells, and by widespread infiltrates of the liver, spleen, and other tissues, analogous to metastatic dissemination of solid tissue cancer. *See* 43 Fed. Reg. 5925 (1978). Once leukemia is diagnosed, there is virtually no chance for recovery. *Id.*

30. These two factors are generally accepted as applying to all diseases in the field of carcinogenesis. 43 Fed. Reg. 5930 (1978).

31. In 1946, the American Conference of Governmental Industrial Hygienists recommended a threshold limit value of benzene exposure of 100 ppm. They subsequently reduced the level to 50 ppm in 1947, 35 ppm in 1948, 25 ppm in 1963, and finally to 10 ppm in 1974. 581 F.2d at 498.

B. History of OSHA

The asserted purpose of the Occupational Safety and Health Act³² is "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources. . . ."³³ Congress passed the Act because previous legislative efforts to curb the human and economic loss caused by industrial accidents and health hazards had failed.³⁴ Prevention of these occupational deaths and injuries was a driving force behind the Act.³⁵ OSHA was enacted when the state occupational safety and health programs of the 1960's were foundering. "[T]he problem of assuring safe and healthful working conditions became too big, too complex, and too urgent for any approach other than decisive federal action."³⁶

During the early 1970's scientific discoveries revealed previously unsuspected cause-and-effect relationships between occupational exposures to chemicals and many chronic cancer and heart diseases.³⁷ Statistics showed that each year, approximately 14,500 workers died as a result of job-related injuries³⁸ and that about 2.5 million workers suffered on-the-job injuries.³⁹ This "industrial carnage"⁴⁰ prompted congressional enactment of OSHA, which rejected the premise that accidents and diseases are the reasonable

32. For a general discussion of the impact and scope of the Act, see Cohen, *The Occupational Safety and Health Act: A Labor Lawyer's Overview*, 33 OHIO ST. L.J. 788 (1972); Gross, *The Occupational Safety & Health Act: Much Ado About Something*, 3 LOY. CHI. L.J. 247 (1972); Spann, *The New Occupational Safety and Health Act*, 58 A.B.A.J. 255 (1972); White & Carney, *OSHA Comes of Age: The Law of Work Place Environment*, 28 BUS. LAW. 1309 (1973); Symposium, *The Developing Law of Occupational Safety and Health*, 9 GONZ. L. REV. 317 (1974); Comment, *The Occupational Safety and Health Act of 1970: An Overview*, 4 CUM.-SAM. L. REV. 525 (1974).

33. Occupational Safety & Health Act § 2(b), 29 U.S.C. § 651(b) (1976).

34. See S. REP. NO. 1282, 91st Cong., 2d Sess. 1, reprinted in [1970] U.S. CODE CONG. & AD. NEWS 5177, 5177-81; Note, 10 HOUS. L. REV. 426, 426-29 (1973).

35. Meeds, *A Legislative History of OSHA*, 9 GONZ. L. REV. 327, 330 (1974).

36. *Id.* at 331. See also Brennan v. Occupational Safety & Health Review Comm'n, 491 F.2d 1340, 1345 (2d Cir. 1974); S. REP. NO. 1282, *supra* note 34, at 5180.

37. Meeds, *supra* note 35, at 347.

38. H.R. REP. NO. 1291, 91st Cong., 2d Sess. 14, 15 (1970), reprinted in [1970] U.S. CODE CONG. & AD. NEWS 5177, 5178. This is a mortality rate two and one-half times greater than the number of American losses in Vietnam. 116 CONG. REC. 38,388 (1970); S. REP. NO. 1282, *supra* note 34, at 5178.

39. 116 CONG. REC. 38,388 (1970).

40. S. REP. NO. 1282, *supra* note 34, at 5218-21 (views of Sen. Javits).

"price which workers and ultimately, society must pay in the name of progress."⁴¹ Section 655(b)(5), which regulates toxic substances, directs the Secretary of Labor to "set the standard which most adequately assures, to the extent feasible . . . that no employee will suffer material impairment of health. . . ."⁴² Whether this feasibility language can be construed to require a cost-benefit analysis of proposed standards must be determined by examination of its application by the courts.

C. *Feasibility*

The cost-benefit test which the Fifth Circuit applied derives from an unknown source which the Supreme Court eventually will have to identify. The search for this source must start with an analysis of the OSHA statute itself. The Act imposes several pragmatic limitations on the kinds of standards which the Secretary of Labor may promulgate. Congress gave the Secretary authority⁴³ to promulgate only those occupational safety and health standards⁴⁴ which are "reasonably necessary or appropriate to provide safe or healthful employment and places of employment."⁴⁵ When setting health standards dealing with toxic substances, the Act compels the Secretary to consider "feasibility."⁴⁶ The Secretary has no authority to set a health standard which is infeasible. Thus, it is important to examine what constitutes a feasible standard in order to determine whether one requirement is the performance of some form of cost-benefit test.

1. Economic Feasibility

Neither the statute nor its legislative history defined feasibility or explained how the limitations on safety and health standards

41. Cohen, *OSHA and the Workplace Environment: An Unfulfilled Promise*, 27 N.Y.U. CONF. LAB. 213, 218 (1974).

42. 29 U.S.C. § 655(b)(5) (1976).

43. The Act gives the Secretary of Labor authority over an estimated 4.1 million work places and 57 million employees, encompassing almost every employer except for governmental bodies and certain employers already covered by other specific safety statutes. [1980] OSHA COMPLIANCE GUIDE (CCH) ¶ 502, at 1009. See also 29 U.S.C. § 652(5) (1976); 29 C.F.R. §§ 1975.1-6 (1979).

44. 29 U.S.C. §§ 651(b)(3), 652(8), 655 (1976).

45. *Id.* § 652(8).

46. *Id.* § 655(b)(5). This requirement is only mentioned in the toxic substance provision but has been interpreted to apply to general standards set under § 6(a) of the Act. See *AFL-CIO v. Brennan*, 530 F.2d 109, 120-23 (3d Cir. 1975). See also *Arkansas-Best Freight Sys., Inc. v. Occupational Safety & Health Review Comm'n*, 529 F.2d 649, 654 (8th Cir. 1976).

were to be established. Such determinations were to be made by administrative agencies and the courts through the promulgation and interpretation of standards.⁴⁷ No feasibility requirement existed in the original draft of section 655(b)(5). Senator Jacob Javits authored the feasibility amendment and stated: “[a]s a result of this amendment the Secretary, in setting standards, is expressly required to consider feasibility of proposed standards.”⁴⁸ He considered the previous draft of the statute inadequate because it contained no criteria for health and safety standards and could be interpreted to require absolute health and safety in all cases. As amended, the Act no longer could be read to require a risk-free working environment if that condition could not reasonably be attained. The courts have helped to define feasibility by incorporating economic⁴⁹ and technological⁵⁰ feasibility concepts into the term, an interpretation adopted by the dissent in the *Benzene Case*.⁵¹ Not all commentators, however, feel this construction of feasibility is proper.⁵²

In *Industrial Union Department, AFL-CIO v. Hodgson*,⁵³ Judge McGowan, while agreeing that OSHA requires safeguards for employee health even though production costs are increased,

47. Berger & Riskin, *Economic and Technological Feasibility in Regulating Toxic Substances Under the Occupational Safety and Health Act*, 7 *ECOLOGY L.Q.* 285 (1978).

48. S. REP. NO. 1282, *supra* note 34, at 5222 (views of Sen. Javits). The committee reports, draft bills, and floor debates are reprinted in SUBCOMM. ON LABOR OF THE SENATE COMM. ON LABOR AND PUBLIC WELFARE, LEGISLATIVE HISTORY OF THE OCCUPATIONAL SAFETY & HEALTH ACT OF 1970 (1971).

49. *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d 467, 477-78 (D.C. Cir. 1974).

50. *AFL-CIO v. Brennan*, 530 F.2d 109, 121 (3d Cir. 1975); *Society of Plastics Indus., Inc. v. OSHA*, 509 F.2d 1301, 1309 (2d Cir.), *cert. denied*, 421 U.S. 992 (1975); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d 467, 477-78 (D.C. Cir. 1974).

51. 100 S. Ct. at 2902 n.30.

52. Sen. Javits' concern about feasibility arose in a context completely removed from economic considerations. The Javits amendment responded to criticism by some legislators that without the "feasibility language" the statute could be interpreted to require the Secretary to ban all occupations in which there remained some risk of injury, impaired health, or life expectancy. It was feared that the statute, if literally applied, could close every business in the nation. The purpose of Javits' amendment was to prevent OSHA from being interpreted in a way that would establish the Secretary as an absolute guarantor of employee health. This is, however, very different from the Court's translation of the Javits amendment into a declaration that Congress wanted the Secretary to consider the costs attendant to compliance standards. Cohen, *supra* note 41, at 235-36.

53. 499 F.2d 467 (D.C. Cir. 1974).

stated: "[t]his is not, however, the same thing as saying that Congress intended to require immediate implementation of all protective measures technologically achievable without regard for their economic impact. To the contrary, it would comport with common usage to say that a standard that is prohibitively expensive is not 'feasible.'"⁵⁴ Congress apparently did not intend to protect employees by putting their employers out of business either by requiring protective devices not within reach of existing technology or by making compliance with standards financially impossible.⁵⁵ Congress, however, did contemplate that the Secretary's rule-making would drive out of business some companies so "marginally efficient or productive" as to be unable to follow standards otherwise universally feasible.⁵⁶ Economic feasibility is one of the cornerstones of the section 655(b)(5) toxic substance standards. Judicial interpretation of economic feasibility will help to clarify its role in the promulgation of OSHA standards.

Even though it may be technologically possible to eliminate a hazard from the work environment, it still may be economically infeasible to do so. Judicial interpretation of the economic feasibility requirement has been consistent among the circuits considering the question: a standard is economically infeasible only if compliance would make "financial viability generally impossible"⁵⁷ or precipitate the "massive economic dislocation" of an industry.⁵⁸

In *Hodgson*, the union attacked an OSHA standard setting the maximum exposure level for asbestos dust.⁵⁹ Union attorneys argued that the Secretary did not set as protective a level of exposure as was feasible. They also criticized the Secretary for factoring the economic effect of the asbestos standard on industry into his determination of the permissible exposure level. In rejecting the Union's contention, the court stated:

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 pur-

54. *Id.* at 477.

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

56. *Id.* at 123. *See also* S. REP. NO. 1282, *supra* note 34, at 5180.

57. *See AFL-CIO v. Brennan*, 530 F.2d 109 (3d Cir. 1975); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 477-78.

58. *AFL-CIO v. Brennan*, 530 F.2d 109, 123 (3d Cir. 1975).

59. 499 F.2d at 477-78.

poses 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.⁶⁰

This harsh view seems defensible when risks to health are so serious as to justify the demise of laggard corporations. Such a situation arose in *Hodgson* and in *American Iron & Steel Institute v. OSHA*,⁶¹ where OSHA sought to eliminate exposure to a known carcinogen. In that case, a health standard governing exposure to carcinogenic coke oven emissions was upheld in the face of a \$240 million to \$1.2 billion compliance cost. The Secretary was aware of the magnitude of the costs but felt that they were affordable in light of the stability and profitability of the steel industry. The American Iron and Steel Institute presented no testimony that the costs would endanger the future existence of the coke industry. The Third Circuit formulated a new test which would require the Secretary only to “*inquire* into the economic feasibility of the standard.”⁶² The standard was economically feasible if an inquiry revealed that no “massive dislocation” of an industry would occur.⁶³ The Secretary had inquired into the standard’s economic feasibility and had concluded that the costs were necessary in order to protect employees from the carcinogenic hazard, therefore the health standard was upheld.⁶⁴

The parallels between *American Iron & Steel Institute* and the *Benzene* Case are evident: both dealt with carcinogenic substances and both imposed enormous financial burdens on industry. Any

60. *Id.* at 478. The court added:

As the effect becomes more widespread within an industry, the problem of economic feasibility becomes more pressing. For example, if the standard requires changes that a few leading firms could quickly achieve, delay might be necessary to avoid increasing the concentration of that industry. Similarly, if the competitive structure or posture of the industry would be otherwise adversely affected—perhaps rendered unable to compete with imports or with substitute products—the Secretary could properly consider that factor. These . . . examples . . . suggest the complex elements that may be relevant to such a determination.

61. 577 F.2d 825 (3d Cir. 1978), *cert. granted sub nom.*, *Republic Steel Corp. v. OSHA*, 100 S. Ct. 3054 (1980). This view, pertaining to economic considerations, was also adopted by Judge Gibbons in *Brennan*, which the American Iron & Steel Institute court found to be controlling in the Third Circuit. *Id.* at 835.

62. *Id.* at 836-37 (emphasis added).

63. *Id.* at 836 (quoting 41 Fed. Reg. 46,751 (1976)).

64. *Id.* at 836.

factual differences which might exist between these two cases should not be significant enough to result in opposite judgments. The Supreme Court majority, in deciding the *Benzene Case*, cited the *American Iron & Steel Institute* fact situation as one successfully demonstrating the existence of a significant health risk.⁶⁵ No cost-benefit balancing test was required or voluntarily performed in the *Hodgson* or *American Iron & Steel Institute* carcinogen regulation cases. Compliance costs were merely estimated. The economic impact on the industry was approximated and was found to be feasible if the economic structure of the market was not undermined.

2. Technological Feasibility

The concept of technological feasibility is closely related to that of economic feasibility. The Secretary's goal is to provide employees with the greatest possible degree of health and safety protection.⁶⁶ In order to further this statutory purpose,⁶⁷ OSHA must be interpreted to force technological development.⁶⁸ Congress would not have created the National Institute for Occupational Safety and Health,⁶⁹ which exists solely to perform OSHA's research, if it were satisfied that industry should be regulated by existing safety standards. Instead, Congress mandated that OSHA

65. 100 S. Ct. at 2871 n.64.

66. 29 U.S.C. § 655(b)(5) (1976).

67. "[T]o stimulate employers . . . to institute new . . . programs for providing safe and healthful working conditions [and to develop] . . . innovative methods, techniques and approaches for dealing with occupational safety and health problems." *Id.* § 651(b)(1),(5).

68. See also Clean Air Act, 42 U.S.C. § 1857 (1970), construed in *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615 (D.C. Cir. 1973); National Environmental Policy Act, 42 U.S.C. § 4331, 4332 (1970), construed in *Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n*, 449 F.2d 1109 (D.C. Cir. 1971); National Traffic and Motor Vehicle Safety Act, 15 U.S.C. §§ 1392, 1394 (1970), construed in *Chrysler Corp. v. Department of Transp.*, 472 F.2d 659 (6th Cir. 1972).

69. NIOSH is required, on the basis of research, demonstrations and experiments to:

develop criteria dealing with toxic materials and harmful physical agents and substances which will describe exposure levels that are safe for various periods of employment, including but not limited to the exposure levels at which no employee will suffer impaired health or functional capacities or diminished life expectancy as a result of his work experience.

29 U.S.C. § 669(a)(3) (1976). NIOSH performs this duty as the Secretary's designate. *Id.* § 671(a). NIOSH is to publish annually a list of all known toxic substances by generic family or other useful groupings, and the concentrations at which toxicity is known to occur. If a potentially toxic substance is not covered by any standard, NIOSH must so advise the Secretary. *Id.* § 669(a)(6) & (e).

constantly develop superior methods of protecting worker safety and health.

The Secretary is faced with a large number of variables and uncertainties when setting safe exposure levels to carcinogens. Current scientific knowledge about the effects of exposure to carcinogens is generally speculative and sometimes even nonexistent, yet it is known that grave potential dangers exist. It is often not possible for the Secretary to implement the standard providing the greatest degree of protection for workers because of the paucity of evidence supporting his standard.⁷⁰ For example, since workers respond differently to the same amount of exposure, the causal connection between disease and exposure must be inferred from complex and sometimes conflicting scientific studies.⁷¹ One commentator, emphasizing that OSHA is preventive in nature, feels that the Secretary should be empowered to set standards with a margin of safety even though no firm evidence can be marshalled to show that such a margin is absolutely necessary.⁷² OSHA's purpose will be undermined unless the concept of technological feasibility is construed to require that industry adopt new, advanced technology in its efforts to protect worker health and safety.

The Secretary's authority to force technological change was tested in the Second Circuit case of *Society of the Plastics Industry, Inc. v. OSHA*.⁷³ The petitioners challenged a maximum vinyl chloride exposure level⁷⁴ by arguing that OSHA could set only those standards which could be implemented by presently available technology. The Secretary allegedly exceeded his authority by reducing permissible exposure to vinyl chloride to "no detectible level," a level which no known technology could achieve. The court, rejecting the industry's assertion that the health standard was impossible to achieve, held that "In the area of safety, . . . the Secretary is not restricted by the status quo. He may raise standards which require improvements in existing technologies or

70. Morey, *Mandatory Occupational Safety and Health Standards—Some Legal Problems*, 38 LAW & CONTEMP. PROB. 584, 587 (1974).

71. *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 487. See also *Synthetic Organic Chem. Mfrs. Ass'n v. Brennan*, 503 F.2d 1155, 1159 (3d Cir. 1974), cert. denied, 420 U.S. 973 (1975); *Dry Color Mfrs. Ass'n, Inc. v. Department of Labor*, 486 F.2d 98, 103 (3d Cir. 1973).

72. Taylor, *Reasonable Rulemaking Under OSHA: Is It Feasible?*, 9 ST. MARY'S L.J. 215, 227 (1977).

73. 509 F.2d 1301 (2d Cir.), cert. denied, 421 U.S. 992 (1975).

74. The vinyl chloride standard is codified at 29 C.F.R. § 1910.1017 (1979). OSHA Standard for Exposure to Vinyl Chloride, 39 Fed. Reg. 35,890 (1974).

which require the development of new technology, and he is not limited to issuing standards based solely on devices already fully developed."⁷⁵

In *Society of the Plastics Industry*,⁷⁶ the *Hodgson*⁷⁷ view of technological feasibility was adopted. The court stated: "some of the questions involved in the promulgation of these [regulatory] standards are on the *frontiers of scientific knowledge*, and consequently as to them insufficient data is presently available to make a fully informed factual determination."⁷⁸ *Society of the Plastics Industry*, however, extended *Hodgson's* feasibility doctrine by establishing the principle that toxic substance standards may impose substantial economic and technological burdens on employers. The court allowed OSHA to set standards requiring industries to improve extant technology or to develop new technology. OSHA's determination of feasibility will not be overturned by industries' complaints of economic or technological impossibility unless the claims are supported by substantial evidence.⁷⁹

The technological feasibility requirement of *Society of the Plastics Industry*⁸⁰ was modified in *American Iron & Steel Institute*.⁸¹ While agreeing with *Society of the Plastics Industry* that the Secretary is not limited by existing technology in setting coke oven emission standards, the court refused to impose an affirmative duty on employers to research and to develop new technology in order to comply with designated exposure levels.⁸² Adhering to its prior *AFL-CIO v. Brennan*⁸³ opinion, the Third Circuit restricted OSHA's power to order the development of new technology by requiring implementation of technology which "*looms on today's*

75. 509 F.2d at 1309. Cf. *Natural Resources Defense Council, Inc. v. EPA*, 489 F.2d 390, 401 (5th Cir. 1974); *Chrysler Corp. v. Department of Transp.*, 472 F.2d 659, 673 (6th Cir. 1972).

76. 509 F.2d at 1301.

77. 499 F.2d at 467.

78. *Id.* at 474 (emphasis added).

79. "OSHA, however, must consider both existing technological capabilities and imminent advances in the Act in determining the feasibility of an alternative." *AFL-CIO v. Brennan*, 530 F.2d 109, 122 (3d Cir. 1975). The *Brennan* court considered a § 655(a) noise reduction standard, not a § 655(b)(5) toxic substance standard, for mechanical power presses. The court felt that if "feasibility" were a valid consideration under § 655(b)(5), then a fortiori it must also be applied with respect to other hazards under the more general language of § 655(a).

80. 509 F.2d at 1301.

81. 577 F.2d at 825.

82. *Id.* at 838.

83. 530 F.2d 109 (3d Cir. 1975).

horizon.”⁸⁴ By relying on the *Brennan* case, which dealt with a nontoxic general health standard under section 655(a),⁸⁵ the court may have unduly restricted the Secretary’s ability to set toxic substance standards which, to the extent feasible, protect employee health. The extent to which technology that “looms on today’s horizon” can be forced upon industries is uncertain. One authority believes that Congress intended toxic substance standards to be more far reaching than nontoxic standards.⁸⁶

Society of the Plastics Industry, Inc. v. OSHA,⁸⁷ *American Iron & Steel Institute v. OSHA*,⁸⁸ and *Industrial Union Department, AFL-CIO v. Hodgson*⁸⁹ have established meaningful guidelines for the Secretary to follow when promulgating health and safety standards. If a standard is prohibitively expensive or will cause massive dislocation of an industry, it is economically infeasible. A standard may go beyond present technology to the frontiers of scientific knowledge and still be technologically feasible. At least in the Third Circuit, though, the most that can be required of industries is adoption of innovations which loom on the horizon. These rules may be reduced to a single criterion: OSHA must set toxic substance standards so that workers are exposed to dangerous substances to the least extent feasible under existing or achievable technology.

In setting his new 1 ppm standard, the Secretary of Labor applied this feasibility test. The costs of compliance were estimated to total one-half billion dollars.⁹⁰ After comparing this figure with information on the profitability and capitalization of the affected industries, the Secretary concluded that the expenditure was feasible since it would not threaten the individual firms’ financial welfare or the industry’s economic viability.⁹¹ Since the Act does not require a feasible standard to pass a cost-benefit test before it becomes enforceable, the Secretary did not balance the costs of compliance

84. *Id.* at 121 (emphasis added).

85. See text accompanying note 42 *supra*.

86. Currier, *OSHA*, 1976 AM. B. FOUNDATION RESEARCH J. 1107, 1136.

87. 509 F.2d at 1301.

88. 577 F.2d at 825.

89. 499 F.2d at 467.

90. OSHA commissioned Arthur D. Little, Inc., a cost-estimating firm, to study the economic impact of the proposed standard on the affected industries. The firm estimated that first-year operating costs would be between \$187 million and \$705 million, that engineering controls would cost \$266 million, and that recurring annual costs would total \$34 million. *American Petroleum Inst. v. OSHA*, 581 F.2d at 503.

91. *Id.*

against the standard's potential health benefits. Though the Act itself does not require the Secretary to conduct a cost-benefit analysis, the Fifth Circuit nevertheless demanded one. The court's balancing test derived from a prior decision in an analogous suit, not from OSHA's enabling statute.

IV. COST-BENEFIT ANALYSIS

A. *Fifth Circuit's Analysis*

The API convinced the Fifth Circuit that OSHA should weigh the costs of contemplated standards against the benefits to be derived from their implementation before promulgating health standards for toxic substances under section 655(b)(5)⁹² of the Act. The API derived this balancing requirement from the feasibility language in the toxic materials section of the Act.⁹³ OSHA, on the other hand, interpreted the Act's feasibility requirement to mean that standards should be achievable. The Fifth Circuit rejected OSHA's arguments: OSHA's enabling statute was construed to require a cost-benefit analysis for standards regulating human exposure to chemicals.⁹⁴

The court relied almost exclusively on its previous holding in *Aqua Slide 'N' Dive v. Consumer Product Safety Commission*,⁹⁵ which arose under the Consumer Product Safety Act (Safety Act).⁹⁶ In that case, a manufacturer of swimming pool slides successfully challenged a safety standard set by the Commission. The Safety Act requires the Consumer Product Safety Commission to find that a standard is "reasonably necessary to eliminate or reduce an unreasonable risk of injury" before it is approved.⁹⁷ In setting the standard aside, the court stated that the Commission had failed to show that its standard was reasonably necessary to eliminate or re-

92. 29 U.S.C. § 655(b)(5) (1976).

93. The Secretary, in promulgating standards dealing with toxic materials . . . shall set the standard which most adequately assures, to the extent *feasible* . . . that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard . . . for the period of his working life.

Id. (emphasis added).

94. *American Petroleum Inst. v. OSHA*, 581 F.2d at 505. "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 cost imposed by the standard." *Id.* at 503.

95. 569 F.2d 831 (5th Cir. 1978).

96. 15 U.S.C. §§ 2051-2081 (1976) [hereinafter referred to as the Safety Act].

97. *Id.* § 2058(c)(2)(A).

duce an unreasonable risk of injury.⁹⁸ Because the Fifth Circuit found that OSHA and the Safety Act had parallel purposes, the “reasonably necessary”⁹⁹ language shared by OSHA and the Safety Act were given identical constructions.¹⁰⁰ The Fifth Circuit, in *Aqua Slide*, found that a cost-benefit test was inherent in the Safety Act.¹⁰¹ Hence, the court reasoned that the same balancing test must be incorporated into the OSHA statute.

OSHA argued, in the alternative, that even if it should have performed a cost-benefit analysis, “substantial evidence” in the record as a whole, as mandated by section 655(f),¹⁰² supported the standard as reasonably necessary within the *Aqua Slide* test. API, however, differed with OSHA’s conclusion that reducing the exposure level to benzene from 10 ppm to 1 ppm would result in “appreciable” benefits.¹⁰³ According to API, that estimation was not supported by substantial evidence, as required by the OSHA statute.¹⁰⁴

The Fifth Circuit found that OSHA had not satisfactorily completed the requisite *Aqua Slide* cost-benefit test mainly because OSHA’s estimate of the benefits to be derived from its new standard was not supported by substantial evidence.¹⁰⁵ Benefits must be quantified by assessing the best available evidence. According to section 655(b)(5) of the Act, establishing standards on the basis of the best available evidence assures that employees will not suffer material impairment of health even if they have regular exposure to hazardous substances.¹⁰⁶ The best available evidence consists of the most recent scientific data and experience gained under OSHA and other health and safety laws.¹⁰⁷

When scientific impossibility prevents determination of an exposure level’s effectiveness, however, the Secretary must make a policy judgment as to whether it should be set at the lowest feasible level. The Secretary of Labor, in the *Benzene Case*, was faced

98. 569 F.2d at 844.

99. Sections 2(b)(1) and 9(c)(2)(A) of the Consumer Product Safety Act require that standards be “reasonably necessary to eliminate or reduce an unreasonable risk of injury.” 15 U.S.C. §§ 2051(b)(1), 2058(c)(2)(A) (1976).

100. *American Petroleum Inst. v. OSHA*, 581 F.2d at 502-03.

101. 569 F.2d at 839.

102. 29 U.S.C. § 655(f) (1976).

103. *American Petroleum Inst. v. OSHA*, 581 F.2d at 503.

104. Occupational Safety & Health Act § 6(f), 29 U.S.C. § 655(f) (1976).

105. *American Petroleum Inst. v. OSHA*, 581 F.2d at 503-04.

106. 29 U.S.C. § 655(b)(5) (1976).

107. *Id.*

with such a choice. He knew that benzene was a carcinogen because of the results of studies performed at exposure levels higher than 10 ppm. He also knew that no known, safe level for benzene exposure existed.¹⁰⁸ The circuit court wanted to see substantial evidence of the benefits to be gained by lowering the exposure level from 10 ppm to 1 ppm.¹⁰⁹ Since no substantial evidence existed which could prove or even imply that low-level exposure to benzene caused leukemia, the Secretary could not prove that reduction in benzene exposure would lower the number of leukemia victims. He therefore failed to sustain his burden of proof as to the "benefits" component of the cost-benefit test.¹¹⁰

B. *Supreme Court Majority's New Test*

The United States Supreme Court, in a five-to-four decision, upheld the circuit court's action, but on substantially different grounds. Justice Stevens, writing for a bare majority, held that the Secretary, before promulgating any health or safety standard, must make a threshold finding that significant risks exist at the place of employment and that they can be eliminated or lessened by a change in current practices.¹¹¹ If such a showing is made, then the standard is " 'reasonably necessary or appropriate to provide safe or healthful employment or places of employment.' "¹¹² This finding, however, merely satisfies the first part of a new two-part test which the Court set for health and safety standards promulgated pursuant to section 655(b)(5).

The second part of the test, never discussed, dealt with the cost-benefit balance. The Court found that the Secretary had not demonstrated a substantial risk and had failed part one of the test; therefore, the second prong of the analysis, the cost-benefit issue,

108. The American Petroleum Institute [hereinafter referred to as API] attacked this position with its own evidence that threshold levels for carcinogens in general, and benzene in particular, do exist. Joint Brief of Petitioners, American Petroleum Inst., *et al.*, at 39, American Petroleum Inst. v. OSHA, 581 F.2d at 493. The evidence presented is basically scientific opinion which also points out that all the studies presented involve higher concentrations of benzene (i.e., over 100 ppm). A "safe threshold" level for carcinogens is as susceptible to proof as a "no safe-exposure level." *Id.*

109. American Petroleum Inst. v. OSHA, 581 F.2d at 504-05.

110. *Id.* at 503. "Without an estimate of benefits supported by substantial evidence, OSHA is unable to justify a finding that the benefits to be realized from the standard bear a reasonable relationship to its one-half billion dollar price tag." *Id.*

111. 100 S. Ct. at 2864.

112. *Id.* at 2850.

was never reached.¹¹³ In fact, the Court specifically avoided the question of “whether section [655(b)(5)] . . . requires [the Secretary] . . . to select the most protective standard . . . or whether . . . the benefits of the regulation must be commensurate with the costs of its implementation.”¹¹⁴

The Court found no direct factual support for OSHA’s conclusion that its 10 ppm standard was unsafe and that a lower, more protective standard was necessary.¹¹⁵ The Secretary’s reasoning process was faulted because he relied on assumptions and not on facts.¹¹⁶ The Secretary had established the standard by following OSHA’s standard carcinogen policy that *any* exposure level above zero is assumed to present an increased risk of cancer, absent proof of a safe exposure level.¹¹⁷ OSHA’s policy was then applied to section 655(b)(5)’s requirement that standards be set at the most protective level feasible.¹¹⁸ The Secretary felt that since no safe threshold level of exposure could be demonstrated,¹¹⁹ the lowest exposure level that was feasible, 10 ppm, was mandated by the statute.

The Supreme Court reasoned that the Secretary’s logic overlooked the threshold issue of whether a significant risk to human health, as proven by substantial evidence, even existed. According to the Court, OSHA was not justified in setting the most stringent standard economically and technologically feasible because the only evidence presented by the Secretary, and the only evidence in existence, was that occupational exposure to *high* concentrations of benzene causes cancer.¹²⁰

The Court described its threshold significant risk test as one requiring a showing that exposure will “more likely than not” present a significant risk of material health impairment.¹²¹ The Court, asserting that Congress intended OSHA to bear the burden of proving the need for a proposed standard, indicated that the Secretary had not even attempted to carry this burden of proof.¹²² The

113. *Id.*

114. *Id.* at 2863.

115. *Id.* at 2858.

116. *Id.* at 2860.

117. *Id.* at 2861.

118. *Id.*

119. *Id.* at 2860-61.

120. *Id.* at 2869 n.60.

121. *Id.* at 2869.

122. *Id.* at 2870.

majority did not "express any opinion on the more difficult question of what factual determinations would warrant a conclusion that significant risks are present which make promulgation of a new standard reasonably necessary or appropriate."¹²³ This responsibility was left to the Secretary.

Justice Marshall, dissenting sharply, foresaw an unfortunate consequence to the majority's industry-protecting decision: it would substantially impair the government's efforts to protect workers from cancer and other diseases.¹²⁴ Justice Marshall felt that the majority had imposed its own regulatory policy, which had no basis in the Act, upon American workers.¹²⁵ According to the dissent, substantial evidence supported the Secretary's lowering of the permissible exposure level. Justice Marshall attacked the majority opinion as "extraordinarily arrogant and extraordinarily unfair."¹²⁶ He felt that, in light of the uncertainty and technical complexity of the issues and evidence, the Secretary's decision was reasonable and furthered OSHA's statutory objective of setting the standard "which most adequately assures, to the extent feasible . . . that no employee will suffer material impairment of health. . . ."¹²⁷ The dissent, unlike the majority, did not insist upon an initial showing that the health risk in question was "more likely than not" significant or that the Secretary's standard was "reasonably necessary or appropriate." Justice Marshall, instead, felt that the "reasonably necessary or appropriate" language of section 652(8) was merely a general requirement that "regulatory actions must bear a reasonable relation to those statutory purposes set forth in the statute's substantive provisions."¹²⁸ The Secretary's actions, according to the dissent, bore a reasonable relation to OSHA's statutory purpose and therefore should have been upheld.¹²⁹

Justice Marshall felt that the Court was usurping Congress's decisionmaking authority by creating its own "significant risk" requirement.¹³⁰ Congress, had it so desired, could have prevented the Secretary from taking regulatory action until scientific evidence proved that a risk was significant. Congress, however, had chosen

123. *Id.* at 2872.

124. *Id.* at 2887 (Marshall, J., dissenting).

125. *Id.*

126. *Id.* at 2890.

127. 29 U.S.C. § 655(b)(5) (1976).

128. 100 S. Ct. at 2897.

129. *Id.* at 2900.

130. *Id.* at 2899.

not to do so.¹³¹ In prescribing this significant risk test the majority had misconstrued the language and legislative history of the Act. According to Justice Marshall, the majority's test had no basis in the Act.

C. *The Supreme Court and Cost-Benefit Analysis*

Even though the *Benzene* majority reserved comment as to the propriety of incorporating a cost-benefit test into the Act,¹³² dicta in the concurring and dissenting opinions alludes to the Court's views on this issue. Justice Powell, in his concurring opinion, concluded that section 655(b)(5) "requires the agency to determine that the economic effects of its standard bear a reasonable relationship to the expected benefits."¹³³ Justice Powell also stated that a health standard which involves costs disproportionate to expected benefits is neither "reasonably necessary" nor "feasible."¹³⁴ OSHA's contention that the Secretary must set the most protective standard capable of achievement was dismissed by reference to the Act's legislative history.¹³⁵ The Congress, according to Justice Powell, intended that OSHA balance workers' health against industry's need for freedom from undue interference.¹³⁶ Reducing every significant health risk without regard to cost would result in a misallocation of resources. Industry's coffers would be depleted by expenditures for safety measures producing only speculative benefits.¹³⁷ Justice Powell found it intolerable that OSHA, without presenting any documentation, had simply announced its finding that the benefits expected to be derived from a 1 ppm exposure level justified the proposed costs.¹³⁸

Justice Marshall disagreed with Justice Powell's position on the cost-benefit issue. He rejected API's argument that OSHA must find that "the benefits of an occupational safety and health standard bear a reasonable relation to its costs."¹³⁹ No support for this position appeared in OSHA's statutory language, structure, or

131. *Id.* at 2898.

132. *See* text accompanying note 114 *supra*.

133. 100 S. Ct. at 2877.

134. *Id.*

135. *Id.* at 2877-78.

136. *Id.* at 2877 n.5.

137. *Id.* at 2878.

138. *Id.*

139. *Id.* at 2902.

legislative history.¹⁴⁰ The term "feasible" is ordinarily defined as "achievable"; it does not mean that benefits must outweigh costs.¹⁴¹ Additionally, Justice Marshall pointed to other regulatory statutes in which Congress has expressly or impliedly required a cost-benefit test.¹⁴² He concluded, by negative implication, that a cost-benefit test was never intended for OSHA. Had Congress wanted OSHA to balance costs against benefits, the requirement would have been stated explicitly in the Act as it was in other statutes.¹⁴³ Justice Marshall accused the majority of exceeding its reviewing authority by disregarding the Act's plain meaning.

V. ANALYSIS

A. *Cost-Benefit Test*

Four Supreme Court Justices and the Second, Third, and District of Columbia Circuits have held that no cost-benefit test need be performed when OSHA promulgates a health standard for a toxic substance.¹⁴⁴ OSHA, moreover, argued that section 655(b)(5) prohibits using such a test. OSHA cited *Society of the Plastics Industry*,¹⁴⁵ *American Iron & Steel Institute*,¹⁴⁶ and *Hodgson*¹⁴⁷ as authority for extending this interpretation to the Fifth Circuit. API, however, felt that OSHA was authorized to promulgate only those standards which are "reasonably necessary or appropriate to provide safe or healthful . . . places of employment."¹⁴⁸ API inferred from the words "reasonably necessary" that OSHA, prior to promulgating a health or safety standard, must balance the measurable benefits to workers against industry's cost of compliance. API asserted that a cost-benefit test must be undertaken each time OSHA promulgates a standard in order to protect industry's finite resources.

140. *Id.*

141. *Id.* at 2902-03.

142. *Id.* at 2898 n.27.

143. *Id.* at 2903.

144. *Industrial Union Dep't, AFL-CIO v. American Petroleum Inst.*, 100 S. Ct. at 2902; *American Iron & Steel Inst. v. OSHA*, 577 F.2d at 825; *Society of the Plastics Indus., Inc. v. OSHA*, 509 F.2d at 1301; *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 467. For the view that cost-benefit analysis may be of only limited utility in standard setting, see Note, *Cost-Benefit Analysis and the National Environmental Policy Act of 1969*, 24 STAN. L. REV. 1092 (1972).

145. 509 F.2d at 1301. See note 73 *supra* and accompanying text.

146. 577 F.2d at 825. See note 61 *supra* and accompanying text.

147. 499 F.2d at 467. See note 59 *supra* and accompanying text.

148. 29 U.S.C. § 652(8) (1976).

OSHA, on the other hand, argued that its 1 ppm standard was economically and technologically feasible. The standard set the lowest feasible level for exposure to benzene in conformance with its policy in other carcinogen cases.¹⁴⁹ OSHA augmented its position with persuasive evidence that no known, safe level for exposure to benzene existed at the time its regulation was promulgated.¹⁵⁰

1. The Fifth Circuit's Derivation of the Cost-Benefit Test

The Fifth Circuit, which derived its cost-benefit test from the Consumer Product Safety Act, made a number of critical errors in its interpretation of the relationship between OSHA and the Safety Act. First, OSHA protects workers from the hazards of life-threatening, carcinogenic chemicals. The Consumer Product Safety Commission protects consumers from "unreasonable risks," such as misleading warning signs on pool slides, which are not life threatening. The role of costs is much different when a hazard is not life threatening because there is more flexibility to weigh the potential benefits against the costs.¹⁵¹ No lives will be lost if an error is

149. See *Industrial Union Dep't, AFL-CIO v. American Petroleum Inst.*, 100 S. Ct. at 2844; *American Iron & Steel Inst. v. OSHA*, 577 F.2d at 825; *Society of the Plastics Indus., Inc. v. OSHA*, 509 F.2d at 1301; *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 467.

150. It is generally agreed that completely safe exposure levels to many chemicals which induce cancer cannot presently be identified and may not exist. See [1970] REP. OF THE SURGEON GENERAL'S AD HOC COMM. ON THE EVALUATION OF LOW LEVELS OF ENVIRONMENTAL CHEM. CARCINOGENS, reprinted in *Chemicals and the Future of Man; Hearings before the Subcomm. on Executive Reorganization and Gov't Research of the Senate Comm. on Gov't Operations*, 92d Cong., 1st Sess. 180 (1971); Crump, Hoel, Langley & Peto, *Fundamental Carcinogenic Processes and Their Implications for Low Dose Risk Assessment*, 36 *CANCER RESEARCH* 2973 (1976); Mantel & Schneiderman, *Estimating "Safe" Levels, A Hazardous Undertaking*, 35 *CANCER RESEARCH* 1379 (1975). See also the discussion and sources cited in OSHA, *Identification, Classification, and Regulation of Toxic Substances Posing a Potential Carcinogenic Risk*, 42 *Fed. Reg.* 54,148, 54,165-67 (1977); Cornfield, *Carcinogenic Risk Assessment*, 198 *SCI.* 693 (1977).

151. See *Continental Can Co.*, [1976-1977] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,009, at 25,254 (Occup'l Safety & Health Review Comm'n, 1976). In two recent cases the Review Commission used a cost-benefit approach in determining the economic feasibility of the noise level standard. *Castle & Cooke Foods, Inc.* [1977-1978] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,854, at 26,325 (Occup'l Safety & Health Review Comm'n, 1977); *Great Falls Tribune Co.*, [1977-1978] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,844, at 26,303 (Occup'l Safety & Health Review Comm'n, 1977). In *Castle & Cooke Foods*, the Commission found that it would cost \$3,100 per employee for implementation of the noise control plus \$1,100 per employee maintenance cost per year. The benefits from this program would be a slight reduction of hearing loss by approximately 12 employees. The Commission held that, "On balance we think that the benefits to be gained do not

committed. In addition, the Safety Act's nontoxic standards should have to meet a tougher test than OSHA standards in order to become law because their effectiveness can be demonstrated much more easily than OSHA standards. Indeed, the legislative history of the Safety Act specifies that costs to consumers in the form of increased product prices, decreased availability, or reduced product usefulness are to be considered in the promulgation of safety standards.¹⁵² Nothing in OSHA's legislative history indicates that such restrictive criteria should be considered in the setting of its safety and health standards.

The Fifth Circuit also erred in deriving a cost-benefit test from the words "reasonably necessary."¹⁵³ A closer look at the *Aqua Slide* opinion reveals that the cost-benefit test required in that case evolved from the words "unreasonable risk."¹⁵⁴ The *Aqua Slide* court adopted the Federal Hazardous Substances Act's¹⁵⁵ definition of "unreasonable risk"¹⁵⁶ which called for "a balancing test like that familiar in tort law."¹⁵⁷ The House Committee Report on the Consumer Product Safety Act¹⁵⁸ emphasized the need for a cost-benefit analysis when it pointed out that: "[o]f course, no standard would be expected to impose added costs or inconvenience to the consumer unless there is reasonable assurance that the frequency or severity of injuries or illnesses will be reduced."¹⁵⁹ Congress clearly intended to impose the cost-benefit balancing requirement on the Safety Commission when promulgating consumer product safety standards. In contrast, the Javits Amendment¹⁶⁰ to OSHA

justify the cost of the controls and that engineering controls are therefore not economically feasible." [1977-1978] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,844, at 26,331 (Occup'l Safety & Health Review Comm'n, 1977).

152. *Aqua Slide 'N' Dive Corp. v. Consumer Product Safety Comm'n*, 569 F.2d at 839. See, e.g., H.R. REP. NO. 835, 92d Cong., 2d Sess. 33, reprinted in [1972] 3 U.S. CODE CONG. & AD. NEWS 4573, 4605 §§ 9(c)(1)(C), (c)(2)(A).

153. *American Petroleum Inst. v. OSHA*, 581 F.2d at 502.

154. The Supreme Court dissent in the *Benzene* Case pointed out that some courts interpret the term "unreasonable risk" to require a balancing of costs and benefits. 100 S. Ct. at 2898 n.27 (Marshall, J., dissenting).

155. 15 U.S.C. § 1261(8) (1976).

156. This definition was espoused in *Forrester v. Consumer Prod. Safety Comm'n*, 559 F.2d 774 (D.C. Cir. 1977).

157. *Aqua Slide 'N' Dive Corp. v. Consumer Prod. Safety Comm'n*, 569 F.2d at 839.

158. H.R. REP. NO. 1153, 92d Cong., 2d Sess. 33 (1972), cited in *Aqua Slide 'N' Dive Corp. v. Consumer Prod. Safety Comm'n*, 569 F.2d at 839.

159. *Id.*

160. See note 48 *supra*.

added only a feasibility test for toxic substance standards. It did not mention a cost-benefit test.

2. Supreme Court's Treatment of the Cost-Benefit Issue

It is apparent from dicta in the *Benzene* Case that the Court essentially was faced with a question of statutory interpretation. Justice Powell and Justice Marshall reached differing conclusions regarding a cost-benefit balancing test in the OSHA statute. The existence of legislative history supporting either interpretation caused this conflict. Unfortunately, Congress used the feasibility language in section 655(b)(5) in many contexts but never adequately defined it.

Justice Powell supported the cost-benefit requirement because of the detrimental economic effects which he perceived would result if no cost-benefit test existed. He posited that, if OSHA ignored economic considerations in setting health and safety standards, a serious misallocation of financial resources would result. Industry would be forced to spend great sums of money to achieve a disproportionately small amount of benefit.¹⁶¹ If the Secretary is permitted to promulgate health and safety standards that massively dislocate industries, their ability to remedy dangerous conditions which are discovered in the future will be severely impaired.

Justice Powell, however, did not recognize that each toxic substance health standard promulgated would affect a different industry. A given industry normally will be required to take protective action against only a small number of toxic health risks, and many of these risks can be remedied simply by substituting one substance for another. Exposure to substances which have no adequate substitute may be lessened by technological and engineering procedures. Annual costs will be comparatively small after initial installation of the new protective devices. Most industries dealing with the use or manufacture of carcinogenic substances are multibillion-dollar industries which can afford a multimillion-dollar expense for protective measures.

In the instant case, the rubber and petroleum industries would be most affected by the benzene standard. The cost of compliance, which OSHA estimated at approximately one-half billion dollars, though significant, is readily affordable by either industry.

161. 100 S. Ct. at 2877.

It must be emphasized that entire industries with extensive financial resources will be forced to bear these expenses, not single corporations. These financial resources also are renewed annually through continued operation of the industry.

Justice Powell's opinion reflected concern for the financial health of American industry. By interpreting a "reasonably necessary"¹⁶² health standard as one which does not require expenditures wholly disproportionate to the expected benefits, Justice Powell protected industry from costs to implement safety devices to reduce exposure to toxic substances. Since science cannot yet quantify the adverse health effects from low-level exposure to most carcinogens, the benefits from reduced exposure will always be outweighed by the compliance costs associated with a toxic substance standard. If Congress had intended this result when it enacted OSHA, it surely would have stated explicitly that costs must be balanced against benefits as it has in other regulatory statutes.¹⁶³ The view which Justice Powell adopted sacrifices the health of American workers for the pursuit of profits by industry. This approach forces the Secretary to place a monetary value upon a human life to enable him to determine at what point the benefits of a health standard outweigh its costs. Congress did not intend such a procedure. On the contrary, Congress could not have expressed its intent to protect workers' health more clearly. The toxic substance section of OSHA requires the Secretary to set a standard "which most adequately assures . . . that no employee will suffer material impairment of health."¹⁶⁴ The dissent interpreted this section differently than Justice Powell did, rejecting Justice Powell's stance.

Justice Marshall viewed the cost-benefit question very simply. He stated that judicial inquiry must end when legislative intent

162. See 29 U.S.C. § 652(8) (1976).

163. See Flood Control Act of 1936, 33 U.S.C. § 701(a) (1976); Clean Water Act, 33 U.S.C. § 1314(b)(1)(B) (1976); Clean Air Act, 42 U.S.C. § 7411(a)(1) (1976). See also Energy Policy & Conservation Act, 42 U.S.C. § 6295(a)(4)(D) (1976); Outer Continental Shelf Land Act, 43 U.S.C. § 1334(a)(1) (1976). Congress has also required a balance between costs and benefits when it uses the term "unreasonable risk." See, e.g., Consumer Product Safety Act, 15 U.S.C. § 2058(c)(2)(A) (1976) (interpreted by *Aqua Slide 'N' Dive Corp. v. Consumer Prod. Safety Comm'n*, 569 F.2d at 831); Child Protection & Toy Safety Act, 15 U.S.C. § 1261(s) (1976) (interpreted by *Forrester v. Consumer Prod. Safety Comm'n*, 559 F.2d 774 (D.C. Cir. 1977)).

164. 29 U.S.C. § 655(b)(5) (1976).

and statutory language are clear.¹⁶⁵ He could not find any support for a cost-benefit balancing test in either of these sources and would not twist the plain language of the Act in order to imply such a test. Justice Marshall found no ambiguity in the term "feasible" as it is used in section 655(b)(5) of the Act. By ordinary definition, an activity is feasible if it is achievable.¹⁶⁶ This definition, coupled with the congressional interpretation and utilization of the term in other regulatory statutes,¹⁶⁷ led Justice Marshall to conclude that no such cost-benefit analysis was ever intended.

Justice Marshall was correct in holding that the legislative intent behind OSHA was protection of workers' health to the extent that it is economically and technologically achievable. The Secretary is constrained by an industry's economic status only in cases where regulations threaten to cause "massive economic dislocation"¹⁶⁸ of the affected industry. Since the entire OSHA statute represents a congressional decision to "assure . . . every working man and woman in the Nation safe and healthful working conditions,"¹⁶⁹ any costs imposed by federal health and safety standards must be regarded as reasonable and necessary costs of doing business. These costs ultimately will be passed on to consumers in the form of higher prices for certain goods, but this is a small price to pay for improving the health of American laborers.

The dissent did not force an unintended meaning onto the Act. If the results of an interpretation precluding a cost-benefit test are destructive to industry, Justice Marshall realized that Congress would remedy the situation. Should American industries become incapable of competing with foreign businesses due to the crippling costs of compliance with OSHA regulations, Congress should step in and take appropriate action. For now, however, Congress has chosen not to balance workers' health against industries' dollars, thereby avoiding the indirect valuation of human life. Until Congress wishes to adopt a cost-benefit test, the judiciary should not impose its own ideas of social policy upon the nation. Justice Marshall's view should control when the cost-benefit issue finally arrives squarely before the Court.

165. 100 S. Ct. at 2887 (Marshall, J., dissenting) (citing *TVA v. Hill*, 437 U.S. 153 (1978)).

166. *Id.* at 2902-03.

167. *See* note 163 *supra*.

168. *See* *AFL-CIO v. Brennan*, 530 F.2d at 123.

169. 29 U.S.C. § 651(a) (1976).

3. The Proper Test—No Balancing

The proper test for a section 655(b)(5) toxic standard involves no balancing at all. The first prong of the test requires measurement of the anticipated compliance costs. Only if costs become prohibitively expensive or cause a massive dislocation¹⁷⁰ of the affected industry will a standard be economically infeasible. The second prong of the test determines whether a regulation is technologically feasible. Technology which is "*on the frontiers of scientific knowledge*"¹⁷¹ or which "*looms on today's horizon*"¹⁷² is technologically feasible. These two prongs are the culmination of pre-*Benzene* decisions¹⁷³ involving regulations dealing with toxic substances. This interpretation of feasibility is further refined by contrasting the toxic substances decisions with the large number of cases arising under the general nontoxic substance standards of section 655(a), which has been interpreted to expressly require a cost-benefit test.¹⁷⁴ If Congress wanted toxic substance standards to pass a cost-benefit test in order to be feasible, it would undoubtedly have included language to that effect in section 655(b)(5).

Two decisions have mandated a cost-benefit analysis for standards dealing with nontoxic section 655(a) health and safety standards. *Turner Co. v. Secretary of Labor*¹⁷⁵ and *RMI Co. v. Secretary of Labor*¹⁷⁶ are factually similar cases dealing with re-

170. See *American Iron & Steel Inst. v. OSHA*, 577 F.2d at 825; *AFL-CIO v. Brennan*, 530 F.2d at 109; *Society of the Plastics Indus. v. OSHA*, 509 F.2d at 1301.

171. *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 467 (emphasis added).

172. *AFL-CIO v. Brennan*, 530 F.2d at 121 (emphasis added).

173. See text accompanying notes 53, 61, 73 & 83 *supra*.

174. *American Iron & Steel Inst. v. OSHA*, 577 F.2d at 835-37; *U.P.S. of Ohio, Inc. v. Occupational Safety & Health Review Comm'n*, 570 F.2d 806, 811-12 (8th Cir. 1978); *Turner Co. v. Secretary of Labor*, 561 F.2d 82 (7th Cir. 1977); *I.T.O., Corp. v. Occupational Safety & Health Review Comm'n*, 540 F.2d 543, 546 (1st Cir. 1976); *Atlantic & Gulf Stevedores, Inc. v. Occupational Safety & Health Review Comm'n*, 534 F.2d 541, 548, 555 (3d Cir. 1976); *Arkansas-Best Freight Sys., Inc. v. Occupational Safety & Health Review Comm'n*, 529 F.2d 649, 653-54 (8th Cir. 1976); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 477; *Atlantic Steel Co.*, [1977-78] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 22,483 (1978); *Louisiana-Pacific Corp.*, [1977-78] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 22,261 (1977); *Castle & Cooke Foods, Inc.*, [1977-78] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,854 (1977); *Great Falls Tribune Co.*, [1977-78] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,844 (1977); *West Point Pepperell, Inc.*, [1977-78] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,751 (1977); *Continental Can Co.*, [1976-77] OCCUP'L SAFETY & HEALTH DEC. (CCH) ¶ 21,009 (1976).

175. 561 F.2d 82 (7th Cir. 1977).

176. 594 F.2d 566 (6th Cir. 1979).

quirements that the industries adopt "feasible administrative or engineering controls."¹⁷⁷ The Sixth Circuit in *RMI*, citing *Turner*,¹⁷⁸ concluded that the OSHA standard in question should be interpreted to require those engineering and administrative controls which were economically, as well as technologically, feasible. Controls were found to be economically feasible even though they were expensive and increased production costs.¹⁷⁹ These controls, however, were not required without regard to the costs which had to be incurred and the benefits expected to be achieved.¹⁸⁰ In approving a cost-benefit analysis, the *RMI* court asserted that "the benefits to employees should weigh heavier on the scale than the costs to employers."¹⁸¹ When the benefits are found to justify the costs, the standard is feasible.

As *Turner* and *RMI* indicate, the circuit courts require strict cost-benefit tests for nontoxic section 655(a) health and safety standards. The Fifth Circuit acquiesced in API's arguments and applied this cost-benefit test to toxic standards under section 655(b)(5).¹⁸² In other carcinogen cases¹⁸³ not a single court even hinted that the rigid cost-benefit analysis applicable to section 655(a) standards should be used for section 655(b)(5) standards. The implication is that toxic and nontoxic substances standards are distinctly different and should be judged by different criteria. The Fifth Circuit was the first to carry the section 655(a) test into the realm of section 655(b)(5). The court appears to have broadened use of the cost-benefit test without justification.

B. *Substantial Evidence Test*

Even if the Fifth Circuit's cost-benefit test had been applicable, OSHA's alternative argument, that substantial evidence sup-

177. 29 C.F.R. § 1910.95(b)(1) (1979).

178. 594 F.2d at 572.

179. See *Arkansas-Best Freight Sys., Inc. v. Occupational Safety & Health Review Comm'n*, 529 F.2d 649, 653 (8th Cir. 1976); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 477.

180. 594 F.2d at 572.

181. *Id.*

182. Criticism of this view can be found in Berger & Riskin, *supra* note 47, at 340. The authors argue that Congress did not intend a "feasibility" requirement for a § 655(a) noise standard. Instead, they believe that feasibility applies only to § 655(b)(5) standards. When hazards are not life threatening, no cost-benefit approach should be used. *Id.*

183. See *American Iron & Steel Inst. v. OSHA*, 577 F.2d at 825; *AFL-CIO v. Brennan*, 530 F.2d at 109; *Society of the Plastics Indus., Inc., v. OSHA*, 509 F.2d at 1301.

ported its 1 ppm standard, should have prevailed. Because of the inconclusive nature of the evidence presented by both sides, and more importantly, because of the less demanding standard of judicial review which the courts apply to the Secretary's legislativelike policy judgments, the court should have ruled in OSHA's favor.

The Occupational Safety and Health Act authorizes courts to review OSHA regulations by a "substantial evidence" standard.¹⁸⁴ This test is met if such relevant evidence exists which a reasonable mind might accept as adequate to support a conclusion.¹⁸⁵ Judicial review of informal decisionmaking is difficult because the administrative record contains a mixture of legislativelike policy judgments and factual determinations.¹⁸⁶ Courts generally use an "arbitrary and capricious"¹⁸⁷ standard for review of legislative determinations and determinations based on unresolved issues of fact. A substantial evidence test, however, is employed for factual determinations.¹⁸⁸

184. "The determinations of the Secretary shall be conclusive if supported by substantial evidence in the record considered as a whole." 29 U.S.C. § 655(f) (1976), *construed in* Synthetic Organic Chem. Mfrs. Ass'n v. Brennan, 503 F.2d 1155, 1157 (3d Cir. 1974). The Senate originally intended to provide quick and flexible development and revisions of occupational safety and health standards through informal rulemaking. The House, however, wanted to require rulemaking on the record. Section 655(f) was the result. Industrial Union Dep't, AFL-CIO v. Hodgson, 499 F.2d at 473; Associated Indus. of New York State, Inc. v. Department of Labor, 487 F.2d at 348-49. *See generally* Note, *Judicial Review Under the Occupational Safety & Health Act: The Substantial Evidence Test As Applied to Informal Rulemaking*, 1974 DUKE L.J. 459.

185. Richardson v. Perales, 402 U.S. 389 (1971); Consolidated Edison Co. v. NLRB, 305 U.S. 197 (1938); Lisefski v. Weinberger, 403 F. Supp. 1364 (E.D. Pa. 1975); Tibbs v. Weinberger, 401 F. Supp. 1139 (E.D. Ky. 1975); Blackmon v. Weinberger, 400 F. Supp. 1282 (E.D. Okla. 1975); Wedlow v. Weinberger, 399 F. Supp. 1215 (E.D. Okla. 1975).

186. *See* Synthetic Organic Chem. Mfrs. Ass'n v. Brennan, 503 F.2d 1155, 1158-60 (3d Cir.), *rehearing denied*, 423 U.S. 886 (1975); Indus. Union Dep't, AFL-CIO v. Hodgson, 499 F.2d at 472-76; Florida Peach Growers Ass'n v. Department of Labor, 489 F.2d 120, 127-29 (5th Cir. 1974); Associated Indus. of New York State, Inc. v. Department of Labor, 487 F.2d 342, 347-50 (2d Cir. 1973).

187. Administrative Procedure Act, 5 U.S.C. § 706 (1976). The "arbitrary and capricious" standard is the normal standard applied to informal agency rulemaking.

188. Noranda Aluminum, Inc. v. Occupational Safety & Health Review Comm'n, 593 F.2d 811 (8th Cir. 1979); Champlin Petroleum Co. v. Occupational Safety & Health Review Comm'n, 593 F.2d 637 (5th Cir.), *cert. denied*, 100 S. Ct. 436 (1979); Southern Colo. Prestress Co. v. Occupational Safety & Health Review Comm'n, 586 F.2d 1342 (10th Cir. 1978); B & B Insulation, Inc. v. Occupational Safety & Health Review Comm'n, 583 F.2d 1364 (5th Cir. 1978); Allis-Chalmers Corp. v. Occupational Safety & Health Review Comm'n, 542 F.2d 27 (7th Cir. 1976); Society of the Plastics Indus. v. OSHA, 509 F.2d at 1304; Synthetic Organic Chem. Mfrs. Ass'n v. Brennan, 503 F.2d 1155, 1160 (3d Cir.), *cert. denied*, 423 U.S. 886

*Industrial Union Department, AFL-CIO v. Hodgson*¹⁸⁹ is the leading case regarding judicial review of OSHA standards.¹⁹⁰ In that case, the District of Columbia Circuit recognized that the Secretary will not always be able to make decisions on the basis of undisputed fact. It would not be fair for courts to apply the same standard of review to regulations based on disputed as well as undisputed facts. The *Hodgson* court reasoned that "when the Secretary is 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."¹⁹¹ The court indicated that it should be flexible in reviewing standards promulgated without the benefit of proven facts. Conclusive information is sometimes simply unavailable to the agency. The Fifth Circuit, however, did not follow *Hodgson* but instead devised its own standard of review.

The Fifth Circuit followed the majority of circuits in adopting the "substantial evidence" standard of review for factual determinations.¹⁹² The standard of review for policy determinations, how-

(1974); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 477. *Contra*, *Associated Indus. of New York State, Inc. v. Department of Labor*, 487 F.2d 342, 347-50 (2d Cir. 1973), in which Judge Friendly made the first use of the substantial evidence test and held that all findings of fact and policy must be supported by substantial evidence. He believed that in a § 655(f) standard of judicial review, the legislative history of the Act does not point to the use of anything but this substantial evidence standard. *Id.* at 349. See S. REP. NO. 1282, *supra* note 34, at 5192; Annot., 25 A.L.R. Fed. 134, 141 (1975) (citing *The Job Safety and Health Act of 1970*, [1971] OPERATIONS MANUAL (BNA) 129). This approach has proved to be unworkable. See *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 467.

189. *Id.* at 472-76.

190. The court in *Synthetic Organic Chem. Mfrs. Ass'n v. Brennan*, 503 F.2d 1155 (3d Cir.), *cert. denied*, 420 U.S. 973 (1974), which followed the *Hodgson* rationale, explicitly set forth the components of judicial review of OSHA standards, and required the following determinations: (1) Whether the Secretary's notice of proposed rulemaking adequately informed interested persons of the action taken; (2) whether the Secretary adequately set forth reasons for his action; (3) whether the statement of reasons reflected consideration of factors relevant under the statute; (4) 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 considered as a whole supports the determination. *Id.* at 1160. There is some controversy as to whether *Synthetic Organic* does, in fact, follow *Hodgson* or *Associated Industries*. Compare Annot., 25 A.L.R. Fed. 150, 158 (1975) (follows *Associated Industries* rationale) with Taylor, *supra* note 72, at 227 (follows *Hodgson* rationale but articulated differently).

191. 499 F.2d at 476.

192. *Florida Peach Growers Ass'n v. Department of Labor*, 489 F.2d 120 (5th Cir. 1974).

ever, consisted of an inquiry into "whether the Secretary carried out his essentially legislative task in a manner reasonable under the state of the record before him."¹⁹³

The record shows that OSHA believed the benefits of its 1 ppm standard would be "appreciable."¹⁹⁴ This conclusion was based on the only two facts known to the agency: Benzene is a carcinogen; and no safe exposure level to benzene was known to exist. OSHA also assumed that exposure to a low level of a toxic substance would necessarily be safer than exposure to a high level. These were the most persuasive facts the Secretary could offer in support of his 1 ppm standard. Scientific evidence linked benzene to leukemia but at exposure levels higher than 10 ppm, the permissible level prior to the promulgation of the Secretary's disputed standard.¹⁹⁵ The highly persuasive Infante study,¹⁹⁶ which demonstrated a fivefold increase in the risk of death from leukemia due to benzene exposure, could not establish that a 1 ppm exposure level would be safer than a 10 ppm level.¹⁹⁷ Even tests with laboratory animals were inconclusive.¹⁹⁸ The Fifth Circuit desired some evidence comparing the effects of exposure to high doses of carcinogens to the effects from low doses. The court even suggested that OSHA chart a dose-response curve¹⁹⁹ to reasonably project the ef-

193. *Id.* at 129.

194. *American Petroleum Inst. v. OSHA*, 581 F.2d at 503.

195. In fact, there is no evidence that links benzene to leukemia at the 10 ppm level, which has been the standard since 1971.

196. *See* note 9 *supra*.

197. This is because no exposure levels were ever measured when the actual exposures occurred. 100 S. Ct. at 2893 n.17.

198. Scientists have yet to conclusively establish that exposure to benzene causes leukemia in animals. *See* 29 C.F.R. § 1910.1028 (1979). Studies on humans linking benzene to leukemia conclusively rebut any suggestion of a lack of toxicity. *See* notes 9 & 10 *supra* and accompanying text.

199. 581 F.2d at 504-05. "A dose-response curve shows the relationship between different exposure levels and the risk of cancer associated with those exposure levels. Generally, exposure to higher levels carries with it a higher risk, and exposure to lower levels is accompanied by a reduced risk." *Id.* at 504 n.24. OSHA had explicitly addressed the possibility of establishing an approximate dose-response curve based upon human exposure data and had concluded that evidence on worker exposure was insufficient to establish such a curve:

[I]t is OSHA's view following a careful review of the record that, at the present time, it is impossible to derive any conclusions regarding dose-response relationships for benzene beyond the general observation that higher exposure levels carry a greater risk than do lower exposure levels. What is apparent, however, is that a decrease in exposure level and/or duration will result in decreased risk of leukemia.

29 C.F.R. § 1910.1028 (1979). The court did not fault this conclusion. It merely held

fect of low-level exposure to benzene. The court wanted OSHA to "make rough but educated estimates . . . of the benefits expected from reducing the permissible exposure level" in order to determine whether these benefits²⁰⁰ bore a "reasonable relationship" to the costs imposed.²⁰¹

The circuit court was asking OSHA to perform a test that was not capable of performance. Medical science could not supply the approximations which the court demanded because there was very little information available showing which exposure levels to benzene concentrations caused detrimental health effects.²⁰² Testing also was complicated by leukemia's long latency period. Leukemia does not become manifest until many years after exposure to a leukemogen. A test performed at the 10 ppm level must extend over decades until the effects of exposure are discovered. More workers, therefore, will have to contract leukemia before OSHA can act.²⁰³ Studying workers who already have been exposed to

that without more data OSHA could not order the lowering of human exposure to benzene. 581 F.2d at 505.

200. *Id.* at 504.

201. *Id.*

202. Even when available data are sufficiently reliable to permit the accurate prediction of a standard's probable health benefits, using cost-benefit criteria to set an exposure standard creates problems. Setting a "feasible" exposure limit and reducing the risk to employees more directly is the preferable approach. First, the greatest difficulty in setting a higher-than-feasible exposure level using cost-benefit techniques is placing an economic value, implicit or explicit, on life, health, bereavement, pain and suffering, and other consequences of occupational disease and death. There is no generally accepted method for valuing such considerations, even implicitly. See Kramer, *Economics, Technology and the Clean Air Amendments of 1970*, 6 *ECOLOGY L.Q.* 161, 165 (1976). For a discussion of the various methods occasionally proposed to quantify the value of life and other intangibles, see 41 Fed. Reg. 46,742, 46,751 (1976). See generally Fried, *The Value of Life*, 82 *HARV. L. REV.* 1415 (1969); Rhoads & Singer, *What is Life Worth?*, 51 *PUB. INTEREST* 74 (1978). Second, there is no general agreement concerning whether a stream of health benefits and saved lives extending into the future should be discounted to present value in the same way that future economic values are generally discounted in awarding tort damages. Third, the Secretary has found that industry tends to overestimate the cost of implementing proposed standards, which makes it difficult to accurately weigh benefits against costs. For example, industry critics asserted that the Secretary's vinyl chloride standard would seriously disrupt business. Nevertheless, the industry promptly complied, at a cost much lower than it had projected, by devising new technology to meet the standard. Vinyl chloride production has continued to increase. See Doniger, *Federal Regulation of Vinyl Chloride: A Short Course in the Law and Policy of Toxic Substances Control*, 7 *ECOLOGY L.Q.* 497 (1978).

203. It would be impossible to perform a test at a 10 ppm exposure level on laboratory animals. Such a test would require the exposure to benzene of thousands of animals who might not survive the test. This is in addition to the difficulties discussed at note 202 *supra*. See also McGarity, *Substantive and Procedural Discretion*

benzene does not provide OSHA with any useful data because there is no way to accurately measure the workers' initial exposure level. This situation is worsened because original records may be nonexistent or difficult to locate. Workers who have moved from job to job may have been exposed to numerous carcinogens at different levels, further impairing the accuracy of any test results.

The Secretary has the burden of demonstrating the need to protect workers from "material impairment of health or functional capacity."²⁰⁴ The Secretary, however, may make a policy judgment when promulgating a health regulation in an area not susceptible to proof.²⁰⁵ In carcinogen regulation cases where neither party can prove its contentions conclusively, the court should defer to the Secretary's judgment. As in *American Iron & Steel Institute*,²⁰⁶ once a cause and effect relationship between a hazardous substance and a disease is established, the burden of proof should shift to the industry to show that a reduction will *not* result in safer working conditions.

Had the Fifth Circuit truly been using the *Florida Peach Growers Association v. Department of Labor*²⁰⁷ "substantial evidence" standard for legislativelike policy judgments, it would have recognized that the Secretary carried out his task in a reasonable manner consistent with the Act's language and purpose.²⁰⁸ Unfortunately, the Supreme Court majority agreed with the circuit court on this point. In doing so, the Court seriously curtailed the Secretary's authority to use his judgment and to take preventive action when regulating exposure to toxic substances.

C. *The Supreme Court Majority's New Test*

The Supreme Court majority held that the Secretary's toxic substances standards must pass a two-part test before they take effect. The Secretary, before setting a new, lower exposure level, must make a threshold finding that the current exposure level in a workplace presents a significant risk of harm to employee health. The second part of the test, dealing with the need for a cost-benefit test, was not discussed since the Secretary had failed to

in *Administrative Resolution of Science Policy Questions: Regulating Carcinogens in EPA and OSHA*, 67 GEO. L.J. 729, 806 (1979).

204. Occupational Safety & Health Act, § 6(b)(5), 29 U.S.C. § 655(b)(5) (1976).

205. *American Iron & Steel Inst. v. OSHA*, 577 F.2d at 833.

206. *Id.*

207. 489 F.2d 120 (5th Cir. 1974).

208. 581 F.2d at 497.

demonstrate that exposure at 10 ppm presented a significant health risk.

The majority derived its significant risk test primarily from the Act's definition of an occupational safety and health standard. The Secretary can only enact standards which are "reasonably necessary or appropriate to provide safe or healthful [workplaces]. . . ."209 The Court grafted this definition onto the section 655(b)(5) requirement that health or safety standards be feasible. The Court's new test requires the Secretary to determine that a health standard is reasonably necessary or appropriate before it can be considered feasible under section 655(b)(5).210 An OSHA standard is considered reasonably necessary when a significant health risk rendering a workplace unsafe can be corrected by a change in industry practices.

OSHA's benzene standard was not reasonably necessary or appropriate because the Secretary had not proven that a significant health risk existed at a 10 ppm exposure level to benzene.211 OSHA had merely assumed that some risk must exist at 10 ppm because benzene was a proven leukemogen and no safe level of exposure could be established. OSHA presented no concrete evidence that a significant risk was presented to employee health at the 10 ppm level. The Fifth Circuit's decision to overrule the 1 ppm standard was affirmed because the Secretary had exceeded his statutory authority in promulgating a health standard not demonstrated to be reasonably necessary or appropriate.212

The majority seriously eroded OSHA's ability to regulate workplaces where toxic substances are present. The Court created a threshold significant risk test yet gave the Secretary only vague guidelines as to what constitutes a significant risk. The Court's examples of risks at either extreme do not materially assist the Secretary in making his determination.213

The Court looked to OSHA's rulings on other carcinogens to show that OSHA had used risk-quantifying measures in the past.214

209. 29 U.S.C. § 652(8) (1976).

210. 100 S. Ct. at 2850.

211. *Id.* at 2855.

212. *Id.* at 2872-73.

213. The majority cited a one in a billion chance of dying from cancer by drinking chlorinated water as an insignificant risk, and a one in a thousand chance of dying from inhalation of gasoline vapors as a risk which "a reasonable person might well consider . . . significant and take appropriate steps to decrease or eliminate it." *Id.* at 2871.

214. *Id.* at 2871-72.

The Court felt that these tests also could be used to measure the effects of exposure to benzene. The risk-quantifying measures, however, usually consisted of reports of actual human deaths and estimates of fatalities likely to result without quick corrective action.²¹⁵ In the *Benzene Case*, the Secretary could not quantify the number of lives which would be saved by the 1 ppm standard but could only estimate that the benefits would be appreciable.²¹⁶ The Supreme Court majority did not accept this estimation as proof of a significant risk. The Court implied, from the kind of evidence it considered necessary to establish a significant risk, that OSHA must wait for deaths to occur before the agency can prove that a toxic substance health standard is necessary.

In the *Benzene Case*, OSHA, for the first time in a carcinogen regulation case, could not estimate the number of deaths which had occurred, or which would occur, if an existing exposure level were not reduced. The benzene standard was truly an example of preventive action by the Secretary of Labor. The effects of low-level exposure to a proven carcinogen were uncertain, but tests performed at slightly higher than 10 ppm exposure levels were known to cause leukemia. The Secretary took immediate action instead of waiting for more conclusive evidence in the form of more deaths. The majority, by holding that the Secretary had exceeded his authority, undermined the Secretary's ability to make the policy judgments which section 655(b)(5) of the Act empowers him to make. Because of inadequate scientific testing procedures, deaths must occur before the Secretary can comply with his statutory duty to "set the standard which most adequately assures, to the extent feasible, . . . 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 life."²¹⁷

VI. ALTERNATIVES

Both the Fifth Circuit and the United States Supreme Court found the rationale behind OSHA's 1 ppm standard to be inadequate to justify the regulation. Both courts, however, could have

215. See *American Iron & Steel Inst. v. OSHA*, 577 F.2d at 831 (coke oven emissions); *Society of the Plastics Indus., Inc. v. OSHA*, 509 F.2d at 1305 (vinyl chloride); *Industrial Union Dep't, AFL-CIO v. Hodgson*, 499 F.2d at 471 (asbestos dust).

216. 100 S. Ct. at 2870.

217. 29 U.S.C. § 655(b)(5) (1976).

upheld OSHA's benzene standard by following persuasive decisions from other circuits and could have saved an unknown number of workers from potentially fatal consequences.

The Third Circuit considered a fact situation similar to that arising in the *Benzene Case in American Iron & Steel Institute v. OSHA*,²¹⁸ which dealt with the validity of a standard lowering the exposure level to coke oven emissions.²¹⁹ The Secretary of Labor had conclusively determined that coke oven emissions were carcinogenic.²²⁰ The mortality rate among employees working on coke oven batteries for five or more years was ten times greater than normal, and the incidence of various nonmalignant respiratory diseases was also substantially above average. The Secretary's Advisory Committee found that "Since coke oven emissions are carcinogenic and there is no scientific data to demonstrate that there is a safe level of exposure to carcinogens, the basis of this standard must be 'no exposure.'"²²¹

In affirming the lower permissible exposure level, the *American Iron & Steel Institute* court held that the Secretary had presented substantial evidence to support his effort to meet a perceived health need. The court also stated that "the Secretary is constrained by the requirement of feasibility, both technological and economic,"²²² when setting the lowest permissible exposure level. The court did not find any cost-benefit test hidden in the Act, nor did the court attempt to graft such a test onto the Act. Since the standard was economically and technologically capable of performance, the court found that the requirements of section 655(b)(5) were met.²²³

The Third Circuit, in *American Iron & Steel Institute*, interpreted section 655(b)(5) of the Act properly. The court accepted OSHA's conclusion that no safe level of exposure existed and then shifted the burden to plaintiffs to prove otherwise. The Secretary, in the *Benzene Case*, had difficulty in justifying his regulation to the Fifth Circuit because the court refused to shift the burden of proof to API even after the Secretary had shown, by substantial ev-

218. 577 F.2d at 825.

219. See 41 Fed. Reg. 46,742 (1976) (adding 29 C.F.R. § 1910.1029).

220. 577 F.2d at 831. "[T]here is overwhelming scientific evidence that coke oven emissions are carcinogenic, . . . hence, 'the ambient atmosphere of coke ovens is a carcinogen rich environment.'" *Id.*

221. *Id.* at 832 n.7. A level of zero exposure could not be set because some of the substance is present naturally in the environment and cannot be removed. *Id.*

222. *Id.* at 832.

223. *Id.* at 835, 837.

idence, that benzene exposure caused leukemia. The Third Circuit, on the other hand, correctly allowed the Secretary's policy judgment to stand without requiring an impossible showing of benefits in the form of lives saved. The court recognized that substantial compliance costs would be imposed on the industry; nevertheless, the Third Circuit considered that saving lives in the future was of utmost priority.²²⁴

Another carcinogen exposure case in the Second Circuit, *Society of the Plastics Industry, Inc. v. OSHA*,²²⁵ dealt with vinyl chloride and polyvinyl chloride exposures. The Secretary again determined that vinyl chloride and polyvinyl chloride were carcinogens and that a safe level of exposure for humans could not be determined. There was, however, conclusive proof that thirteen workers had died from exposure to these substances and that cancerous tumors had formed in laboratory animals at a 250 ppm exposure level.²²⁶ No evidence whatsoever showed that exposure to levels below 50 ppm would cause cancer in, or even be unsafe for, humans.

The Second Circuit upheld the new 1 ppm standard and found that substantial evidence justified the lower exposure level.²²⁷ The court dismissed the very same "no proof of lives saved" argument that API made in the *Benzene Case*²²⁸ by stating: "it must be remembered that we are dealing here with human lives, and the record reveals that . . . [thirteen] workers have already died from this potent chemical."²²⁹ The Second Circuit also accepted the Secretary's determination that no safe level of exposure to vinyl chloride and polyvinyl chloride existed and shifted the burden of proof to petitioners to prove otherwise, just as the Third Circuit had done in *American Iron & Steel Institute*.²³⁰ The *Society of the*

224. The estimated costs of compliance with this standard range from \$240,000,000 to \$1,280,000,000. The court stated "[a]lthough we are very sensitive to the financial implications of the standard and have endeavored to carefully weigh its effect upon the well-being of the industry, we are not persuaded that its implementation would precipitate anything approaching the 'massive dislocation' . . . which would characterize an economically infeasible standard." *Id.* at 836.

225. 509 F.2d at 1301.

226. *Id.* at 1305-06.

227. *Id.* at 1308.

228. No proof exists in the record which justifies lowering the standard, since the medical evidence does not establish that low-level exposure to vinyl chloride and polyvinyl chloride is safe. *Id.*

229. *Id.*

230. 577 F.2d at 825.

Plastics Industry court found that the Secretary's duty under OSHA is to protect workers and to act even when health risks posed by a substance cannot be definitively proven.²³¹

American Iron & Steel Institute and *Society of the Plastics Industry* offered the circuit court and the Supreme Court precedent, but both courts inexplicably chose not to follow it. The *American Iron & Steel Institute* and *Society of the Plastics Industry* courts did not hesitate to find that the Secretary, in lowering exposure levels, had performed his duty to protect workers from health hazards as mandated by the Act. Yet neither case presented any more evidence of the effects of low-level exposure than the *Benzene* Case. Neither the Fifth Circuit nor the Supreme Court tried to reconcile or distinguish these two cases that were virtually identical to the *Benzene* Case before them. The circuit court, instead, relied on *Aqua Slide*,²³² which it interpreted improperly. The Supreme Court did not even allude to the division among the circuits regarding the quantum of evidence of health risk which must be found before the Secretary can promulgate a new health standard. Both courts exhibited an overriding concern for industrial economic welfare. Their view contrasts sharply with the humanistic approaches of the Second and Third Circuits. The Fifth Circuit, in breaking with these other two circuits, and the Supreme Court, in ignoring them, transformed the Act, intended to be a protector of worker health and safety, into a procedure which cannot regulate exposure to toxic chemicals until human fatalities prove that the chemicals are sufficiently dangerous.

Rather than require additional proof of benzene's fatal qualities, the Supreme Court should have held that its self-imposed significant risk test was satisfied. In the majority's view, substantial evidence must demonstrate that it is more likely than not that a significant health risk exists before the Secretary can promulgate a protective standard.²³³ Substantial evidence has been defined as "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion."²³⁴ Judicial review under the sub-

231. 509 F.2d at 1308.

232. See notes 95-107 *supra* and accompanying text.

233. 100 S. Ct. at 2869. The Act provides for the substantial evidence test as the proper standard of review of the Secretary's actions. 29 U.S.C. § 655(f) (1976).

234. *Universal Camera Co. v. NLRB*, 340 U.S. 474, 477 (1951); *Consolidated Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

stantial evidence test, however, is ultimately deferential.²³⁵ Since the Court struck down OSHA's standard, the Justices must have felt that, based on the evidence presented at the administrative hearing, a reasonable person would not believe that a significant health risk more likely than not existed in workplaces where benzene was present.

The Court did not ease OSHA's burden of proof despite the highly technical and complicated nature of the medical evidence and issues presented. Such evidence is extremely difficult to interpret, rendering definitive resolution practically impossible. Conclusive proof of the regulation's effectiveness, then, was impossible for the Secretary to present.

The Act, however, does not prevent the Secretary from taking action when his ultimate decision cannot be based on conclusive fact. Rather, the Act directs him to "set the standard . . . on the basis of the best available evidence. . . ."²³⁶ The Secretary examined fifty volumes of exhibits and testimony containing persuasive evidence on both sides of the issue. Considerable evidence was presented which conclusively proved that exposure to benzene caused leukemia and other nonmalignant blood disorders at exposure levels ranging from 0 to 30 ppm.²³⁷ The Secretary was forced to make a decision without the benefit of conclusive evidence. No study could determine the effects of low-level exposure to benzene because the latency period for such an experiment is potentially twenty years. The Secretary decided that a significant health risk existed on the basis of the best evidence available to him.

The Court should have deferred to the Secretary because of his expertise in the area of carcinogen regulation. Sufficient relevant evidence existed to convince a reasonable mind that a significant health risk was presented by continued exposure to benzene. Justice Marshall, writing for the dissent, stated that the majority "must recognize that the ultimate decision cannot be based solely on determinations of fact, and that those factual conclusions that have been reached are ones which the courts are ill-equipped to resolve on their own."²³⁸

The Court, in effect, held that no toxic substance can be said to present a significant risk to an employee's health unless some

235. See, e.g., *Richardson v. Perales*, 402 U.S. 389, 400-01 (1971); *Consolo v. Federal Maritime Comm'n*, 383 U.S. 607, 618-21 (1966).

236. 29 U.S.C. § 655(b)(5) (1976).

237. 100 S. Ct. at 2892.

238. *Id.* at 2896 (Marshall, J., dissenting).

measurable benefit will be derived from elimination of the substance or from a decrease in the exposure level. A precise quantification of the benefits to be derived from the benzene standard was the only data which science could not supply. Benefits are not always capable of estimation either, especially when human lives must be lost in order to predict how many people can be saved by corrective action.

The *Benzene* holding requires the Secretary to accumulate conclusive evidence that low-level exposure to benzene will cause disease, while in the interim an inestimable number of workers are being exposed to hazards which eventually may kill them. In light of the express language and intent of the Act, the Court should have found that the Secretary's legislativelike policy judgment regarding benzene was within his statutory authority and was supported by substantial evidence in the record. Had OSHA been able to prove that one or even a few lives would have been saved, it is questionable whether the Court still would have held that benzene presented no significant risk to employees' health.

VII. CONCLUSION

The *Benzene* Case raised the issue of whether the Secretary of Labor must balance compliance costs against expected benefits when he is promulgating health and safety standards for toxic substances. The United States Court of Appeals for the Fifth Circuit held that the "reasonably necessary" language of section 652(8) of the Occupational Safety and Health Act requires the Secretary of Labor to balance costs against benefits. In finding that a cost-benefit test was implied in the Act, the court misinterpreted section 652(8). The court erred by analogizing this statutory provision to a similar section of the Consumer Product Safety Act, which also contained "reasonably necessary" language. Since the two statutes shared the same language and the Safety Act required a cost-benefit test, OSHA was interpreted to require a cost-benefit test as well.

The United States Supreme Court majority avoided the cost-benefit issue by holding that the Secretary had failed its new significant risk test. Under this test, the Secretary must find a workplace to be unsafe due to the presence of significant risks before regulatory action may be taken. The Secretary also must determine that OSHA's regulations would reduce these risks. The Court held that the Secretary had not determined that a significant risk was more likely than not presented to workers' health by the presence

of 10 ppm of benzene. Since the Secretary failed the first part of the significant risk test, it was not necessary for the Court to reach the cost-benefit issue.

Justice Marshall, dissenting, felt strongly that no cost-benefit test could be inferred from the plain language of the Act. Since Congress had expressly included a cost-benefit test in other regulatory statutes, Congress's failure to include such a test in OSHA evinced its intent not to require the test. Justice Marshall stated that the majority's new significant risk test had no basis in the Act. He felt that the majority's test was not related to the intent expressed by Congress in enacting OSHA and reflected the majority's own notions of proper regulatory policy.

A more desirable test for section 655(b)(5) toxic substance standards would determine whether the standards are economically and technologically achievable. The Second and Third Circuits now use this test, and section 655(b)(5) authorizes it. Both circuits have upheld decisions by the Secretary to decrease carcinogen exposure levels upon mere findings that the standards were economically and technologically achievable.

Both the Fifth Circuit and the Supreme Court could have found solid precedent in *American Iron & Steel Institute v. OSHA*²³⁹ and *Society of the Plastics Industry, Inc. v. OSHA*²⁴⁰ to uphold OSHA's 1 ppm standard. Instead, both courts embarked on a lives-versus-dollars analysis of the Secretary's legislativelike policy decision. The Fifth Circuit demanded definitive medical proof that some lives would be saved by a decreased benzene exposure level, but this evidence simply was unavailable. The evidence demanded by the Fifth Circuit essentially required that more workers die before the link between low-level exposure to benzene and leukemia could be established.

The Supreme Court effected the same result by imposing a significant risk test upon OSHA. Previous cases illustrate that the only way to show a significant risk is to supply the court with a death count. The Supreme Court, in holding that substantial evidence did not prove that a significant risk more likely than not was presented to employee health by continued low-level exposure to benzene, incorrectly evaluated OSHA's compelling evidence.

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239. 577 F.2d at 825.

240. 509 F.2d at 1301.