Boston College Environmental Affairs Law Review

Volume 9 | Issue 3 Article 5

1-1-1981

Industrial Union Department, ALF-CIO v. American Petroleum Institute: Limiting OSHA's Authority to Regulate Workplace Carcinogens Under the Occupational Safety and Health Act

Vincent C. Baird

INDUSTRIAL UNION DEPARTMENT, AFL-CIO V. AMERICAN PETROLEUM INSTITUTE: LIMITING OSHA'S AUTHORITY TO REGULATE WORKPLACE CARCINOGENS UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT

*Vincent C. Baird**

I. INTRODUCTION

By enacting the Occupational Safety and Health Act of 1970 (the Act),[1] Congress sought "to assure so far as possible" that working conditions in America will be "safe and healthful."[2] To achieve that end, the Act empowers the Secretary of Labor to promulgate "mandatory occupational safety and health standards,"[3] and requires that employers comply with those standards.[4]

The exercise of this standard-setting authority has proven to be particularly troublesome when the Secretary has attempted to set permissible levels for employee exposure to carcinogenic substances.[5] The difficulties inherent in regulating occupational carcinogens stem primarily from the fact that the scientific community has yet to answer many of the questions about cancer. Specifically, safe exposure levels to carcinogens, if they exist, cannot presently be ascertained.[6] When the Occupational Safety and Health Administration (OSHA) tries to ensure that workplaces are safe and healthful by

---

* Staff Member, BOSTON COLLEGE ENVIRONMENTAL AFFAIRS LAW REVIEW.

1. Occupational Safety and Health Act of 1970, 29 U.S.C. §§ 651-678 (1976).

2. *Id.* § 651(b).

3. *Id.* § 651(b)(3). Under the Act, the Secretary is authorized to set occupational safety and health standards. This authority has been delegated to the Assistant Secretary for Occupational Safety and Health, who is the head of the Occupational Safety and Health Administration (OSHA). Hereafter this article will use "the Secretary" and "OSHA" interchangeably.

4. *Id.* § 654(b).

5. The regulatory dilemma created by occupational carcinogens is considered in detail in Section IV of this article.

6. 42 Fed. Reg. 54,148 (1977).

regulating occupational exposure to carcinogens, the agency must necessarily act without complete or conclusive data.

Recognizing both the deficiency of scientific knowledge and the need for effective regulation, the Secretary proposed in 1977[7] a generic approach to the identification, classification, and regulation of toxic substances which exhibit a carcinogenic potential. This approach incorporates those policy judgments which the Secretary has repeatedly used to set standards for occupational carcinogens. Essentially, the approach requires that whenever a substance is identified as carcinogenic, the Secretary is to set the permissible exposure limit "as low as feasible."[8] Under the generic approach, the Secretary is not obliged to estimate the risk of cancer created by low-level exposure to the occupational carcinogen under consideration.

While reviewing OSHA standards based on inconclusive factual records, the courts have attempted to identify the factual determinations the Secretary must make in order to validly promulgate a regulation. The circuit courts which have addressed this issue have sent conflicting signals to the Secretary. When the Secretary promulgates a lower standard for occupational exposure to a carcinogen, he is obliged to consider the health benefits (*i.e.*, lives saved or cancers prevented) that are likely to be achieved by the standard If the record on which he bases the lower standard is incomplete and inconclusive, the Secretary would ordinarily be unable to make even a rough estimation of the extent of the expected benefits. Of the four circuit courts which have reviewed OSHA standards for occupational carcinogens, the District of Columbia, the Second, and the Third Circuits had allowed the Secretary to regulate even though he could not estimate the expected benefits.[9] The Fifth Circuit, however, had broken with this pattern and found that the Secretary must provide a rough but educated estimate of the expected benefits in order to validly promulgate a standard.

In *American Petroleum Institute v. Occupational Safety and Health Administration*, the Fifth Circuit considered an industry petition challenging the validity of the Secretary's regulation which reduced the permissible exposure limit for benzene. After concluding that exposure to benzene created a leukemia hazard, the Secretary had reduced the permissible exposure limit from 10 parts benzene

7. This policy for regulating occupational carcinogens became effective April 21, 1980. 45 Fed. Reg. 5,002 (1980).

8. OSHA's Proposed Rule on the Identification, Classification and Regulation of Toxic Substances Posing a Potential Carcinogenic Risk, 29 C.F.R. § 1990.101 (1980).

9. These circuit court decisions are considered in detail in Section V of this article.

per million parts of air (10 ppm) to 1 ppm. The Fifth Circuit set aside the lower standard, finding that the Secretary had not made the necessary estimate of the benefits expected from the 1 ppm standard.[10]

On writ of certiorari, the case went to the Supreme Court. In *Industrial Union Department, AFL-CIO v. American Petroleum Institute*,[11] the Court affirmed the Fifth Circuit decision. Chief Justice Burger, and Justices Stevens, Stewart, and Powell determined that the Act requires the Secretary to make a threshold finding that exposure to a toxic substance at the present permissible limit poses a significant risk of harm. These Justices concluded that in promulgating the 1 ppm standard for benzene, the Secretary exceeded his statutory authority because he did not find that exposure to benzene at a 10 ppm level creates a significant risk of harm.

Justices Marshall, Brennan, White, and Blackmun vigorously dissented. They found nothing in the Act to support the requirement of a threshold finding. Instead, they determined that the Secretary was within his statutory authority when he promulgated the 1 ppm standard for benzene. The dissent concluded that the 1 ppm standard was sufficiently supported by the Secretary's finding that the reduction in occupational exposure would achieve some health benefits.

In the case, the Supreme Court did not directly consider the validity of OSHA's generic approach to the regulation of workplace carcinogens. However, if future courts follow the lead of the four Justices who required a threshold finding of significant risk, the ability of the Secretary to use the generic approach may be undercut.

The objective of this article is to analyze the Supreme Court's decision in *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, with an eye toward assessing its potential effect on the Secretary's generic approach to regulating occupational carcinogens. First, the article will discuss the purpose of the Occupational Safety and Health Act, and cite sections 3(8) and 6(b)(5) of the Act, the two provisions the Supreme Court was called on to construe. Second, the article will provide background information about benzene, as well as describe the Secretary's permanent standard of 1 ppm which gave rise to the controversy considered by the Supreme Court. Third, the article will outline OSHA's generic approach to the

10. American Petroleum Institute v. Occupational Safety and Health Administration, 581 F.2d 493, 505 (5th Cir. 1978).

11. 448 U.S. 607 (1980).

regulation of occupational carcinogens. Fourth, the article will examine the split between the District of Columbia, the Second, and the Third Circuits on one hand, and the Fifth Circuit on the other. This split centered on the question whether the Act requires the Secretary to estimate the expected benefits prior to promulgating a standard. Fifth, the article will analyze the Supreme Court's decision in *Industrial Union Department, AFL-CIO v. American Petroleum Institute.* This analysis will focus on the two issues which divided the plurality and the dissent: (1) whether section 3(8) applies to section 6(b)(5) and requires the Secretary to make a threshold finding of significant risk prior to regulation; and (2) whether Congress intended that the Secretary regulate only significant risks under the Act. Finally, the article will conclude with a consideration of the effect that this Supreme Court decision may have on OSHA regulation of occupational carcinogens.

II. THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

In 1951, Senator Hubert H. Humphrey introduced in Congress a bill which called for uniform national health and safety codes. The bill was eventually abandoned, as were other bills of the same type introduced during the next ten to twelve years. While none of these efforts resulted in a piece of legislation, they did indicate a growing awareness on Congress' part that the federal government would have to assume a leading role if health and safety standards for industry were to be improved.[12]

The need for this improvement was obvious. Statistics compiled in the late 1960's indicated that hazardous workplace conditions were exacting a staggering toll on American society.[13] Before the federal government stepped in, the states had the responsibility of ensuring that workplaces were safe. However, state programs throughout the country varied widely in their scope and effectiveness, and these differences were increasing as the years went by.[14]

In 1970, Congress finally succeeded in passing a comprehensive

12. THE JOB SAFETY AND HEALTH ACT OF 1970, BNA OPERATIONS MANUAL 15-16 (1971).

13. In his August 6, 1969 message to Congress, President Nixon indicated that "every year in this country some fourteen thousand deaths can be attributed to workplace related injuries or illnesses." President Nixon also noted that "accidents or diseases sustained on the job" cause the loss of "some 250 million man-days of labor" each year. He stated that these losses have great economic consequences: "The economy loses millions of dollars in unrealized production and millions more must be used to pay workmen's compensation benefits and medical expenses." 115 CONG. REC. 22,510 (1969).

14. *Id.*

bill designed to address the problem of hazardous workplace conditions. On December 29, 1970, President Nixon signed the Occupational Safety and Health Act into law.[15] The Act's purpose is to "assure so far as possible"[16] that working conditions are safe and healthful throughout the country. To fulfill that purpose, the Act authorizes the Secretary of Labor to set occupational safety and health standards for all businesses which affect interstate commerce.[17] The Act requires compliance with OSHA standards,[18] and subjects non-complying employers to civil and criminal penalties.[19]

The legislative history of the Act evidences Congress' concern with the threat to worker health created by the occupational use of toxic chemicals and new technologies. In the report of the Senate Committee on Labor and Public Welfare,[20] it was noted that:

> Other materials long in industrial use are only now being discovered to have toxic effects. In addition, technological advances and new processes in American industry have brought numerous new hazards to the workplace. Carcinogenic chemicals . . . present incipient threats to the health of workers. Indeed, new materials and processes are being introduced into industry at a much faster rate than the present meager resources of occupational health can keep up with. It is estimated that every 20 minutes a new and potentially toxic chemical is introduced into industry. New processes and new sources of energy present occupational health problems of unprecedented complexity.
>
> Recent scientific knowledge points to hitherto unsuspected cause-and-effect relationships between occupational exposure and many of the so-called chronic diseases—cancer. . . .[21]

On the Senate floor, Senator Harrison Williams[22] reported that a strong concern over employee exposure to toxic materials surfaced throughout the subcommittee hearings. He indicated that the Act was intended to effectively protect workers from the increasingly dangerous threat created by chemical and physical hazards in the workplace.[23]

Like its Senate counterpart, the report of the House Committee on

15. 29 U.S.C. §§ 651-678 (1976).
16. *Id.* § 651(b).
17. *Id.* § 651(b)(3).
18. *Id.* § 654(a)(2).
19. *Id.* § 666.
20. S. REP. NO. 1282, 91st Cong., 2d Sess. (1970).
21. *Id.* at 2-3.
22. (D.-N.J.).
23. 116 CONG. REC. 37,326 (1970).

Education and Labor[24] was concerned with the large number of new workplace chemicals whose properties and health effects are not fully understood.[25] During the House debate, statements were made which dealt specifically with the need for greater protection of workers against the health hazards created by the occupational use of toxic chemicals.[26] This congressional concern is manifested in the Act itself. Section 6(b)(5) requires that whenever toxic materials are regulated, the Secretary must "set the standard which most adequately assures, to the extent feasible . . . that no employee will suffer material impairment of health or functional capacity."[27]

---

24. H.R. REP NO. 1291, 91st Cong., 2d Sess. (1970).

25. The House report stated that as "occupational health research becomes more sophisticated," the toxicity of "chemicals to which workers are exposed will be discovered." *Id.* at 14-16.

26. Representative Dominick Daniels (D.-N.J.) indicated that state laws were particularly inadequate with regard to the regulation of "the insidious 'silent' killers such as toxic fumes, bases, acids, and chemicals." 116 CONG. REC. 38,376 (1970). Representative Morris Udall (D.-Ariz.) noted that a major preoccupation of Congress was with the "whole area of the industrial consumption of chemicals and . . . the occupational diseases" which are caused by these chemicals. Representative Udall argued that "we had better learn more about the chemicals and other substances which are being used in increasing numbers and variety in the production processes of this country, especially whether or not they are toxic." He concluded that "we urgently need more regulation of these products and greater prevention of their abuse," in order to narrow the "unconscionable gap between the minimal protection being given to several million workers regularly exposed to the gases, dusts, and mists of American industry, and the protection they need." 116 CONG. REC. 38,391 (1970).

27. 29 U.S.C. § 655(b)(5) (1976). This provision states:

> The Secretary, in promulgating standards dealing with toxic materials or harmful physical agents under this subsection, shall set the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence, that no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life. Development of standards under this subsection shall be based upon research, demonstrations, experiments, and such other information as may be appropriate. In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be the latest available scientific data in the field, the feasibility of the standards, and experience gained under this and other health and safety laws. Whenever practicable, the standard promulgated shall be expressed in terms of objective criteria and of the performance desired.

This provision appears in the section of the Act which describes the three types of standards the Secretary is authorized to issue. These three types of standards are: national consensus standards and established federal standards; emergency temporary standards; and permanent standards.

Section 3(9) of the Act defines a national consensus standard as:

> [A]ny occupational safety and health standard or modification thereof which (1) has been adopted and promulgated by a nationally recognized standards-producing organization under procedures whereby it can be determined by the Secretary that persons interested and affected by the scope or provisions of the standard have reached substantial agreement on its adoption, (2) was formulated in a manner which

The Supreme Court decision in *Industrial Union Department, AFL-CIO v. American Petroleum Institute* turned not only on an interpretation of section 6(b)(5), but also on an interpretation of section 3(8). That latter provision defines an occupational safety and health standard as a standard which is "reasonably necessary or appropriate to provide safe or healthful employment and places of employment."[28] The split in the Supreme Court resulted from the fact that the plurality and the dissent reached different conclusions concerning the meaning of and relationship between sections 3(8) and 6(b)(5).

In *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, the Court considered the validity of the Secretary's 1 ppm standard for occupational exposure to benzene. In order to provide the background needed to understand the Court's decision, the following section of this article will outline the health hazards created by benzene exposure, and the Secretary's regulatory attempt to reduce those hazards.

---

afforded an opportunity for diverse views to be considered and (3) has been designated as such a standard by the Secretary, after consultation with other appropriate Federal agencies.

29 U.S.C. § 652(9) (1976).

Section 3(10) defines an established federal standard as:

[A]ny operative occupational safety and health standard established by any agency of the United States and presently in effect, or contained in any Act of Congress in force on December 29, 1970.

Id. § 652(10).

Section 6(a) gave the Secretary the authority, during the first two years of the Act's existence, to adopt as an occupational safety or health standard any preexisting national consensus standard or established federal standard. The American National Standards Institute, Inc. and the National Fire Protection Association, two private organizations, are the major sources of national consensus standards. 29 U.S.C. § 655(a) (1976). See note 52 *infra*.

Section 6(c), 29 U.S.C. § 655(c) (1976), authorizes the Secretary to issue emergency temporary standards, which take immediate effect upon publication in the Federal Register. The Secretary must first determine that occupational exposure to the substance poses a grave danger to workers, and that the standard is necessary to protect workers from that danger. These standards may remain effective no longer than six months.

Section 6(b), *id.* § 655(b), describes the rulemaking procedure the Secretary is to follow as he sets permanent standards which either supersede those standards adopted under § 6(a) or regulate any area for which standards had not previously existed. Section 6(b) generally provides that the Secretary is to promulgate rules "in order to serve the objectives of this chapter." *Id.* § 655(b)(1). Section 6(b)(5) describes the requirements the Secretary must meet when he sets standards for toxic materials or harmful physical agents.

28. 29 U.S.C. § 652(8) (1976). Section 3(8) states that, "for the purposes of this chapter": the term "occupational safety and health standard" means a standard which requires conditions, or the adoption or use of one or more practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment.

III. Benzene: Its Properties, Uses, Health Effects, and Regulatory History

A. Benzene's Properties and Industrial Uses

A highly flammable liquid with a strong, rather pleasant odor, benzene is a hydrocarbon compound (C_6H_6) which has a low boiling point and high vapor pressure.[29] It therefore evaporates rapidly under ordinary atmospheric conditions. Workers absorb benzene primarily by inhaling its vapors.[30]

The petrochemical and petroleum refining industries produce 94 percent of the benzene produced in America by a process called catalytic reformation.[31] The remainder is produced as a by-product of the coking process used in steel mills.[32] Benzene production has already reached a high level and shows no sign of slowing down. In 1976, approximately 11 billion pounds of the chemical were produced.[33]

The list of industries using benzene includes the chemical, printing, lithograph, rubber cements, rubber fabricating, paint, varnish, stain removers, adhesives, and petroleum industries.[34] Benzene's first major industrial use was in the rubber industry just prior to World War I. Currently, most of the benzene produced is used as a feedstock or intermediate in the production of other organic chemicals.[35] Such products as plastics, artificial fibers, and rubber are derived from benzene.[36] Along with its industrial uses, benzene is often present in chemical laboratories, where it is used as a solvent and reactant in many chemical applications.[37]

---

29. Emergency Temporary Standard for Occupational Exposure to Benzene, 42 Fed. Reg. 22,516, 22,517 (1977).

30. *Id. See also* 43 Fed. Reg. 5,918, 5,920 (1978).

31. *Id.* at 5,918. Catalytic reformation "converts certain lower octane hydrocarbons into higher octane aromatics." *Id.*

32. *Id.*

33. *Id.* "Only eleven other chemicals and only one other hydrocarbon (ethylene)" are produced in greater amounts in the country. *Id.*

34. *Id.*

35. *Id.* Approximately 86% of the benzene produced is used as an intermediate in the production of other organic chemicals. These chemicals include styrene, phenol, and cyclohexane.

36. Brief for Respondents at 6, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980). The manufacture of detergents, pesticides, solvents, and paint removers consumes most of the remainder of the benzene. 43 Fed. Reg. 5,918 (1978).

37. 43 Fed. Reg. 5,918 (1978). There are small quantities of benzene in the ambient air. These quantities range from a few parts per billion parts of air to 0.5 ppm. 448 U.S. 607, 615 (1980) (plurality opinion). *See* Brief for Federal Parties at 9, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980).

B. The Health Hazards Created by Benzene Exposure

Since 1900, benzene has been known as a toxic substance which can produce acute or chronic effects. When benzene vapors are inhaled, the benzene diffuses rapidly through the lungs and is quickly absorbed into the blood.[38] If an individual is exposed to high concentrations of benzene, an almost immediate reaction occurs in the central nervous system. In fact, if the concentration is near 20,000 ppm, death can occur within minutes as a result of an acute circulatory failure or coma.[39] Inhalation of milder concentrations of benzene can produce a period of nervous excitation, euphoria, headache, and nausea. This can be followed by a period of depression which may result in cardiovascular collapse and/or unconsciousness. The lingering effects, which may last up to several weeks after exposure, include breathlessness, nervous irritability, and unsteadiness in walking.[40]

Other acute effects of benzene exposure at still lower concentrations (250-500 ppm) have been observed. At this level, the signs and symptoms of mild poisoning appear, including vertigo, drowsiness, headache, and nausea. Once exposure ceases, these symptoms quickly disappear.[41]

Chronic exposure to low concentrations of benzene has been found to produce non-malignant blood disorders.[42] Chronic exposure above the 25-40 ppm range may lead to bone marrow toxicity, resulting in blood deficiencies and potentially fatal diseases of the blood-forming organs.[43] Scientific data has not yet demonstrated if these adverse health effects can be caused by exposure to benzene below 20 ppm.[44] In addition, scientific evidence has established that chronic exposure

---

38. 43 Fed. Reg. 5,918, 5,920 (1978).
39. *Id.* at 5,921.
40. *Id.*
41. *Id.*
42. *Id.* Benzene attacks the hematopoietic (blood-forming) systems, particularly the bone marrow, and thus causes alterations in the level of formed elements in the circulating blood. Chronic exposure to benzene commonly causes a decrease in the levels of red blood cells, white blood cells, and platelets; these declines are called anemia, leukopenia, and thrombacytopenia, respectively. Depending in part on the severity of the decline, these decreased blood counts may result in overt physical symptoms. Anemia may cause a person to appear pale and to be weak and easily fatigued. Leukopenia renders a person prone to recurrent infections. Thrombacytopenia can impair blood-clotting, which may be manifested as easy bruising, nosebleeds and hemorrhage. *Id.*
43. *Id.* at 5,924. When all three formed elements (red and white blood cells and platelets) of the circulating blood are depressed, the result can be pancytopenia or aplastic anemia, noncancerous diseases that can prove fatal. *Id.* at 5,922.
44. *Id.* at 5,925.

to benzene is causally related to the development of leukemia.[45] As early as 1928, evidence suggested that a leukemia risk accompanies occupational exposure to benzene. Epidemiological studies[46] published in the late 1960's and early 1970's indicate that benzene exposure creates a significantly increased risk of leukemia.[47] However, because the available data does not include levels of exposure, the particular exposure levels for benzene which pose an increased risk of leukemia cannot be identified.[48]

C. Benzene's Regulatory History

Because of these and other[49] adverse health effects traced to the occupational presence of benzene, its history has been characterized by increasingly stringent regulation. Since 1946, the American Conference of Government Hygienists (ACGIH) has repeatedly reduced its recommended level of occupational exposure to benzene.[50] Some

45. *Id.* Leukemia is a cancer of the white blood cells. Its characteristics are: "the appearance of abnormal, immature white cells in the circulating blood; diffuse and almost total replacement of the bone marrow with the leukemic cells; and widespread infiltrates of the liver, spleen, and other tissues, analogous to metastatic dissemination of solid tissue cancer." *Id.*

Industry did not challenge the conclusion that there was an evidentiary basis for the finding "that exposure to high benzene concentration (in excess of 100 ppm) can cause leukemia." Brief for Respondents at 8, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980). Industry's primary contention was that a threshold or safe exposure level existed for benzene. Industry argued that because there were no studies indicating a leukemia risk below 100 ppm and because negative studies had indicated no excess incidence of leukemia among workers exposed to low concentrations of benzene, the safe exposure level was well in excess of 10 ppm. *Id.* at 16.

46. An epidemiological study begins with the scientist's selection of a group ("cohort") of workers who have been exposed to a chemical for a period of years. The scientist then compares the number of cancers which occurred in that group of workers with the number of cancers which occurred in a similar group that had no exposure to the chemical. By way of this comparison, the scientist determines if exposure to the chemical is associated with the development of cancers. Brief for Federal Parties at 11 n.11, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980). *See* McGarity, *Substantive and Procedural Discretion in Administrative Resolution of Science Policy Questions: Regulating Carcinogens in EPA and OSHA*, 67 GEO. L.J. 729, 741 n.57 (1979) [hereinafter cited as McGarity].

47. 43 Fed. Reg. 5,918, 5,925-32 (1978).

48. *Id.* at 5,927.

49. In addition to the health risks noted in the text, the Secretary of Labor has noted that "studies reveal that there are statistically significant increases in chromosomal damage in those occupationally exposed to benzene." *Id.* at 5,932.

50. In 1946, ACGIH recommended a threshold limit value (TLV) of 100 ppm for benzene exposure. In 1947, the TLV was lowered to 50 ppm; and in 1948, following Massachusetts' lead, it was reduced to 35 ppm. ACGIH proposed a TLV of 25 ppm in 1963. This reduction was based on benzene's nonmalignant blood effects, since no mention was made of the leukemia hazard created by benzene exposure. In 1974, ACGIH adopted the American National Standards Institute (ANSI) standard of 10 ppm. 43 Fed. Reg. 5,918, 5,919 (1978).

states have been active in benzene regulation as well. In Massachusetts, for example, the permissible exposure limit for benzene has been periodically lowered since 1934 as evidence of the chemical's toxicity has accumulated.[51]

In 1969, the American National Standards Institute (ANSI),[52] a private, non-profit organization which promulgates national consensus standards for voluntary use, set a standard of 10 ppm. One year after enactment of the Occupational Safety and Health Act, the Secretary adopted the ANSI standard without rulemaking, pursuant to section 6(a) of the Act.[53] The 10 ppm standard was not based on the leukemia risk created by benzene exposure, but on the need to reduce the risk of non-malignant blood disorders.[54]

In 1974, the National Institute of Occupational Safety and Health (NIOSH)[55] reported that benzene's potential for causing leukemia must not be disregarded. Still, NIOSH did not recommend a reduction of the permissible exposure limit (then at 10 ppm), primarily because there was no conclusive proof that benzene was carcinogenic.[56]

Epidemiological studies appeared between 1974 and 1976 indicating that occupational exposure to benzene presented a statistically significant risk of leukemia.[57] Having reviewed this data,

51. By 1934, benzene toxicity in the shoe leather industries of Massachusetts was a serious problem. Consequently, the state's Department of Labor founded a Division of Occupational Hygiene. The Division reduced the maximum acceptable limit (MAC) of benzene exposure to 75 ppm in 1934. This limit was reduced to 35 ppm in 1948. 43 Fed. Reg. 5,918 (1978). *See* Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 617 (1980) (plurality opinion).

52. Along with the National Fire Protection Association, ANSI is the major source of national consensus standards. ANSI standards are promulgated for voluntary use, but many of them have been incorporated into local, state, and national law and regulation. ANSI is a private, voluntary, non-profit organization. It includes representatives from scientific, technical, trade, professional, consumer, and labor organizations. ANSI also has some 900 individual companies as company members. These companies are not directly involved in standards development or approval; they have direct votes on policy matters only. They provide financial support, but ANSI imposes a limit on each company's contribution. Less then 50% of ANSI's operating budget comes from industry and member organizations. The rest comes from sales of standards and from special projects. THE JOB SAFETY AND HEALTH ACT OF 1970, BNA OPERATIONS MANUAL 29-30 (1971).

53. 43 Fed. Reg. 5,918, 5,919 (1978).

Section 6(a), 29 U.S.C. § 655(a) (1976), permitted promulgation of national consensus standards and established Federal standards during the first two years of the Act by way of an informal, shortened rulemaking procedure. See note 27 *supra*.

54. 43 Fed. Reg. 5,918, 5,919 (1978).

55. NIOSH was established by the Act to aid the Secretary in the regulation of toxic materials and harmful physical agents. 29 U.S.C. § 655(b)(1) (1976).

56. 43 Fed. Reg. 5,918, 5,919 (1978).

57. *Id.* at 5,926-30.

NIOSH updated and revised its criteria document of 1974. In August 1976, it concluded that benzene must be considered carcinogenic, and therefore recommended reduction of occupational exposure to 1 ppm, the lowest feasible level.[58] As a result, the Secretary of Labor issued in January 1977 voluntary "Guidelines for Control of Occupational Exposure to Benzene," which requested that exposure be restricted to 1 ppm whenever possible.[59]

Also in January, NIOSH reported that it was about to conduct an epidemiological study of benzene's health effects on the basis of data collected from workplaces in St. Mary's and Akron, Ohio.[60] In those workplaces, employees in adequate numbers had been exposed to benzene for a period of years. The study's preliminary findings[61] indicated that for the workers exposed to benzene from 1940 to 1949, there was at least a five-times greater incidence of leukemia deaths than would be expected.[62] This new evidence prompted the Secretary to issue an Emergency Temporary Standard for Occupational Exposure to Benzene on May 3, 1977.[63]

This standard, which reduced exposure to 1 ppm, was scheduled to take effect on May 21, 1977. Several petitions for review of the standard were filed immediately.[64] On May 19,[65] the Court of Appeals for the Fifth Circuit entered a temporary restraining order against the standard. Abandoning the emergency temporary standard, the Secretary instead issued a proposed permanent standard for benzene exposure.[66] The proposed standard was essentially the same as the emergency standard.[67] After public hearings on the proposal, the permanent standard appeared on February 10, 1978.[68]

---

58. *Id.* at 5,919.

59. *Id.*

60. *Id.* The worksite was a manufacturing plant owned by the Goodyear Tire and Rubber Company; the plant used benzene at various stages in the production of pliofilm. Pliofilm was a type of plastic food-wrapping material produced until the 1960's.

61. The study's preliminary conclusions were conveyed to the Secretary on April 15, 1977. *Id.*

62. *Id.* at 5,927.

63. Emergency Temporary Standard for Occupational Exposure to Benzene, 42 Fed. Reg. 22,516 (1977).

64. Brief for Federal Parties at 12 n.13, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980).

65. Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 623 (1980) (plurality opinion). The date cited in 43 Fed. Reg. 5,918, 5,919 (1978) was May 20, 1977.

66. Permanent Standard for Occupational Exposure to Benzene, 29 C.F.R. § 1910.1028 (1980).

67. Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 623 (1980) (plurality opinion). *See* Brief for Respondents at 12.

68. Public hearings on the proposal began on July 19, 1977, and were concluded on August

The permanent standard mandated a reduction in benzene exposure to no more than 1 ppm in the air, averaged over eight hours, or to no more than 5 ppm, averaged over fifteen minutes.[69] In addition to having to implement engineering and other controls to affect this reduction, employers were required to monitor workplaces to ascertain the existing exposure levels, and to advise employees of these levels.[70] Medical examinations were to be conducted by the employer whenever the exposure level exceeded 0.5 ppm.[71] The standard also required labeling of products which contained benzene, and imposed stringent limitations on employee exposure to liquid benzene.[72] The standard did not apply to the sale, discharge, storage, transportation, distribution, or use as a fuel of gasoline and other fuels after they have been discharged from bulk terminals.[73]

The Secretary justified the reduction in occupational exposure to benzene by the following rationale. The evidence in the record established that benzene can cause non-malignant blood disorders and leukemia. However, the evidence neither permitted the Secretary to determine a specific exposure level for benzene that was safe, nor answered the question whether a safe level existed at all. Because benzene created a leukemia risk which could exist at any exposure level above 0 ppm, and because the Secretary read section 6(b)(5) of the Act to require maximum protection of worker health, the Secretary concluded that ideally the permissible exposure limit should be 0 ppm. Since a 0 ppm limit was not technologically feasible, 1 ppm was selected as the level closest to 0 ppm that could be achieved by industry.[74]

The Secretary also reached a conclusion concerning the economic

---

10, 1977. Ninety-five witnesses testified, including employers and employer associations from a number of industries, as well as representatives of workers occupationally exposed to benzene. 43 Fed. Reg. 5,918, 5,919 (1978). Over fifty volumes of exhibits and testimony were gathered. Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 696 (1980) (dissenting opinion).

69. 29 C.F.R. § 1910.1028(c)(1) (1980).

70. *Id.* § 1910.1028(e) (1980).

71. *Id.* § 1910.1028(i) (1980).

72. *Id.* § 1910.1028(c)(2), (k) (1980). This aspect of the permanent standard was also challenged by industry. Since the Supreme Court did not consider this challenge in much detail, it will receive no attention in this article.

73. 43 Fed. Reg. 5,918, 5,941 (1978). Justice Stevens called this a "particularly significant" exception to the permanent standard, because it meant that "over 795,000 gas station employees, who are exposed to an average of 102,700 gallons of gasoline (containing up to 2% benzene) annually, are thus excluded." Beyond this, Justice Stevens did not mention this "particularly significant" exception. Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607. 628 (1980).

74. 43 Fed. Reg. 5,918, 5,947, 5,948 (1978).

feasibility of the 1 ppm standard for benzene. Section 6(b)(5) requires that standards promulgated under that section be feasible.[75] The Secretary's interpretation of economic feasibility required that standards not be so costly as to drive entire industries or large numbers of employers out of business. Based on a study predicting the economic effects of the 1 ppm standard,[76] the Secretary determined that the greater share of the costs of compliance would be borne by industries like petroleum refining and petrochemical production.[77] Such industries were found to possess the size and stability that would allow them to absorb these costs or pass them on to consumers. Because the costs of the benzene regulation would not endanger the financial welfare of either the industries involved or the general economy, the Secretary concluded that the 1 ppm standard was economically feasible.[78]

The Secretary also considered the benefits which might result from the 1 ppm standard, but disavowed any statutory obligation to make a systematic evaluation of costs and benefits.[79] The Secretary read the Act to require that a regulation "assure maximum benefit (*i.e.*, prevention of serious illness or death), constrained only by the limits of feasibility."[80] Accordingly, when the evidence concerning the possible health benefits of the benzene regulation was evaluated, the Secretary used an approach that would err, if at all, on the side of overestimation of those benefits. The Secretary found that appreciable benefits could result from the 1 ppm standard.[81] This find-

75. *Id.* at 5,934.

76. The study was conducted by Arthur D. Little, Inc. 43 Fed. Reg. 5,918, 5,934 (1978).

77. *Id.* The Secretary estimated the costs of compliance as follows: "first year operating costs for all industries combined . . . [will] be approximately in the range of $187 million to $205 million, recurring annual costs are estimated at approximately $34 million and investment in engineering controls is expected to be approximately $266 million." *Id.*

While Justice Stevens stated that he was not addressing the cost-benefit question, he did use the Secretary's estimates to show that for the expenditures required by the 1 ppm standard, "only 35,000 employees would gain any benefit." He calculated the costs per employee in the rubber manufacturing industry ($1390/employee), the petrochemical industry ($39,675/employee), and the petroleum refining industry ($82,000/employee). Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 629 (1980) (plurality opinion). In his dissent, Justice Marshall wrote that these estimates are "misleading" because "most of the cost of the benzene standard would be incurred only once and would thus protect an unascertained number of employees in the future," over and above those now employed. *Id.* at 701-02 n.22 (dissenting opinion).

78. 43 Fed. Reg. 5,918, 5,934, 5,941 (1978).

79. *Id.* at 5,940.

80. *Id.*

81. *Id.* at 5,940-41. The Secretary stated that the number of cancers prevented by the reduction in exposure—the benefits—"may be" or "are likely to be" appreciable. In so finding, the Secretary refused to rely on the estimate made by Dr. Richard Wilson, the head of Har-

ing was based on the generally accepted scientific opinion that the risk created by exposure to a carcinogen decreases as the exposure level is lowered.[82] The Secretary reasoned that if the permissible exposure limit for benzene is reduced from 10 ppm to 1 ppm, the health risks benzene creates would be reduced as well. This would mean that fewer cases of leukemia would occur at 1 ppm than at 10 ppm, and thus that some health benefits would be achieved.

The Secretary maintained that a quantification (*i.e.*, determining the number of lives saved or cancers prevented) of the expected benefits was impossible for two reasons. First, the data indicating the leukemia risk at higher exposure levels was not complete enough to allow a determination of the actual number of deaths expected to occur at those levels.[83] Second, even if the risk of leukemia at high exposure levels could be identified, the risk at low levels (at 10 ppm and 1 ppm) must be extrapolated from that data. Science has yet to agree on a single theory of extrapolation. Since a dose-response curve[84] could not be constructed because of these inadequacies, the number of cancers that are likely to occur at either the 10 ppm level or the 1 ppm level could not be estimated. Thus, the number of cancers prevented by the reduction in exposure—the benefits—could not be determined.[85]

The Secretary's inability to estimate the cancer risks created by low-level exposure to benzene is representative of the essential problem the Secretary confronts as he regulates occupational carcinogens. Because of inadequate scientific data, the Secretary is unable to either establish a safe exposure level to a carcinogen, or estimate the risks created by low-level exposure to the carcinogen. In order to effectively regulate occupational carcinogens despite this

---

vard's Energy and Environmental Policy Center. Appearing as an industry witness during the hearings on the 1 ppm standard, Dr. Wilson testified that only one leukemia and one other cancer would be prevented every six years by the 1 ppm standard. *Id.* at 5,941. Concerning this risk assessment, the Secretary concluded that: "the severe incompleteness of the epidemiological data for benzene, combined with the uncertainty inherent in such exercises, precludes any meaningful use of even an 'upper bound' risk assessment for purposes of setting an occupational health standard for benzene." Reply Brief for Federal Parties at 5, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980). The Secretary also found that Dr. Wilson's hypothesis could not be squared with the rest of the record. 43 Fed. Reg. 5,918, 5,941 (1978).

82. 43 Fed. Reg. 5,918, 5,940 (1978).

83. *Id.*

84. A dose-response curve indicates the "relationship between different exposure levels and the risk of cancer associated with those exposure levels." McGarity, *supra* note 46, at 735 n.27.

85. 43 Fed. Reg. 5,918, 5,940-41 (1978).

lack of knowledge, the Secretary adopted the generic approach, which relieves him from having to estimate the risk present at low exposure levels. However, the Supreme Court in *Industrial Union Department, AFL-CIO v. American Petroleum Institute* set aside the 1 ppm standard for benzene because the Secretary failed to make a threshold finding that exposure at a 10 ppm level creates a significant risk of leukemia. So, while the Court did not directly consider the validity of the Secretary's generic approach, its decision may prevent the Secretary from using that approach in the future.

In the next section, the regulatory problems created by occupational carcinogens will be outlined, and the Secretary's response to those problems (*i.e.*, the generic approach) will be described.

IV. OSHA'S GENERIC APPROACH TO THE REGULATION OF OCCUPATIONAL CARCINOGENS

Cancer's impact on contemporary society is extremely destructive. The number of lives lost, the accompanying human anguish, and the economic consequences are massive.[86] There is presently a recognition by the scientific community that 60 to 90 percent of all cancer may be related to and influenced by environmental factors.[87] This means that regulation in the workplace may significantly reduce the toll exacted by the disease. If cancer-causing agents can be identified and occupational exposure eliminated or minimized, cancers may be prevented. The problem, however, is that cancer imposes unique obstacles to effective regulation by agencies like OSHA.[88]

A. Regulatory Problems Created by Cancer

Two factors conspire to make regulation of carcinogens such a difficult task: lack of adequate scientific knowledge;[89] and the nature of cancer itself.[90] There is insufficient understanding of the early cellular effects of cancer and of the causative factors which lead to

86. 42 Fed. Reg. 54,148, 54,150 (1977). *See* Kraus, *Environmental Carcinogenesis: Regulation on the Frontiers of Science*, 7 ENV'T LAW 83 (1976-77) [hereinafter cited as Kraus]. For example, in 1975, 665,000 new cases of cancer were diagnosed and 365,000 deaths due to cancer were reported. Direct annual expenditures because of the disease are well into the tens of billions of dollars; indirect costs caused by cancer include the estimated 1.8 million work years lost annually to the national economy and to family income because of unemployed and underemployed cancer victims. 42 Fed. Reg. 54,148, 54,150 (1977).

87. 42 Fed. Reg. 54,148, 54,150 (1977).

88. *Id.* at 54,149-55.

89. *See* Kraus, *supra* note 86, at 94.

90. 42 Fed. Reg. 54,148, 54,149 (1977).

initiation of the disease in a cell.[91] The scientific community is divided over the question whether the intrusion of a single molecule of a carcinogen into a susceptible cell is enough to cause cancer.[92] If the so-called "one-hit" theory is correct, no exposure level to a chemical carcinogen above 0 ppm would be free of the risk of adverse effects. If, however, safe exposure levels do exist, science is not now able to determine those levels.[93]

There are two biological characteristics which distinguish cancer from other processes of chronic toxicity: its general irreversibility of effect and the generally long period of latency between exposure to a carcinogen and appearance of a tumor.[94] Once the transformation from a normal to neoplastic (cancerous) cell has occurred, the cell can replicate and produce neoplastic daughter cells. Because of the disease's irreversible nature, further exposure to the carcinogen after the initial neoplastic change is not necessary to sustain the process which can culminate in a tumor that grows autonomously.[95] Consequently, regulation of employee exposure to a carcinogen after the cellular transformation to neoplastic status appears to be

---

91. *Id.* at 54,149, 54,151. In particular, science does not yet understand "the induction of a critical change in the target cells which determines their subsequent growth as tumor cells." Science has been unable to identify the "specific molecular target of a carcinogen within a cell." It is understood, however, that "carcinogens can interact directly with the genetic material of the cells (DNA), as well as with other molecules that control cellular functions (RNA and proteins)." *Id.* at 54,151.

92. *Id.* at 54,149. Doniger, *Federal Regulation of Vinyl Chloride: A Short Course in the Law and Policy of Toxic Substances Control*, 7 ECOLOGY L.Q. 497, 510 (1978) [hereinafter cited as Doniger]; Kraus, *supra* note 86, at 88-89 n.34. It is also not known whether there are detoxification, repair, or other defense mechanisms which are able either to detoxify a carcinogenic molecule before it reaches a critical site, to repair damage caused to a DNA molecule, or to destroy a mutated DNA molecule before it develops into a cancer. If such defenses exist, there may be safe or no-effect exposure levels below which cancer will not be caused. The issue is complicated further by the fact that individual susceptibility to carcinogens appears to vary greatly. So, to protect all workers absolutely against any risk of leukemia, "even industry witnesses agreed that . . . only a zero exposure limit [for benzene] would suffice." Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607, 636-37 n.41 (1980) (plurality opinion).

93. 42 Fed. Reg. 54,148, 54,165 (1977). Expert committees "are substantially in agreement that dose-response data cannot be used to set no-effect levels for exposure to chemical carcinogens." *Id.* In fact, it has been argued that the "extrapolation of carcinogenic effects at high-dose levels to low-dose levels" is a trans-scientific issue. A trans-scientific issue is defined as a technical question that is "cast in scientific terms" and yet "for various practical or moral reasons cannot be answered by science." McGarity, *supra* note 46, at 733.

After initiation, the first stage of cancer development, comes "promotion," the development of the injured cell to the status of a tumor. Science does not fully understand this stage of the disease either. Kraus, *supra* note 86, at 95.

94. 42 Fed. Reg. 54,148, 54,152 (1977).

95. *Id.* at 54,151-52.

useless. To be effective, the regulation must prevent even a relatively small number of molecules of a carcinogen (which can initiate the transformation) from ever interacting with the target cell or cells.[96]

The latency period which characterizes cancer's development can last anywhere from five to forty years.[97] This fact frustrates the process of identifying carcinogenic substances by way of observation of direct human experiences. The practical difficulties of conducting epidemiological studies over years and even generations seem insurmountable.[98] Also, during the long course of a study, there is a possibility that other factors will intervene which distort the results of the study.[99] Finally, the decision to wait a number of years for the results may be imprudent, since in the interim workers will be constantly exposed to a potential risk of cancer.[100]

As was the case with benzene, the evidence of a substance's carcinogenic effects often comes from epidemiological studies. These retrospective studies compare the incidence of cancer in a group of workers occupationally exposed to a substance with the incidence of that type of cancer in the general population. In addition to the problem that epidemiological findings only become available many years after exposure has occurred,[101] there are numerous other difficulties inherent in epidemiological studies.[102] Since subjective considerations play a major role in the interpretation of data collected in an epidemiological study, scientists will frequently reach different conclusions about the substance under consideration.[103] Thus, epidemio-

96. *Id.*

97. *Id.* at 54,152.

98. Kraus, *supra* note 86, at 95.

99. *Id.*

100. 42 Fed. Reg. 54,148, 54,152 (1977).

101. *Id.*

102. It is usually the case that workers were exposed to too many different substances at unknown doses for unknown periods of time to draw statistically credible conclusions about the particular substance being studied. The synergistic (or cumulative) and antagonistic interactions among various chemicals in the workplace reduce further the likelihood that reliable conclusions about the effects of a particular chemical can be made. 42 Fed. Reg. 54,148, 54,149 (1977); Doniger, *supra* note 92, at 511.

103. Since data from these studies is often on the borderline of statistical significance, subjective considerations of the scientist interpreting the data often determine the particular findings made. In addition, the results are entirely dependent on the manner in which the initial test and control cohorts were selected; this too is a highly subjective decision. McGarity, *supra* note 46, at 740-41. Because of the great influence exerted by subjective considerations and scientific judgment, the data collected from any epidemiological study may be interpreted differently by different scientists. *Id.* at 742.

Due to all these methodological problems, epidemiological studies produce findings which are not necessarily reliable. Animal studies are the major source of data on the carcinogenicity of chemicals; unfortunately, they too have their failings. Doniger, *supra* note 92, at 512-13. It

logical studies do not provide the Secretary with conclusive information about the health effects of a particular substance.

Because of the nature of dose-response curves,[104] they too are not especially helpful to the Secretary as he regulates occupational exposure to carcinogens. The available scientific evidence on which a curve is based will often be questionable. Also, any attempt to extrapolate from that data—which indicates the risk accompanying high exposure levels—to low levels is greatly dependent on subjective factors. Any dose-response curve is only as accurate as its underlying assumptions are valid.[105] Because assumptions concerning the manner in which humans respond to carcinogens at low exposure levels determine the shape of the curve, risk assessments by different scientists (using different assumptions) are often widely divergent, even when the same data base is used.[106] Since knowledge concerning the process by which a chemical carcinogen causes the transformation of normal cells into neoplastic ones is so scarce, these assumptions can be neither completely discredited nor endorsed.

Thus, the Secretary is faced with a dilemma. The Act requires that workplaces be safe; but when the Secretary regulates an occupational carcinogen, he does not know whether there is any exposure level above 0 ppm that does not create a risk of cancer. And, even if there is a safe exposure level, the Secretary has no reliable way of determining it.

This regulatory dilemma has meant that certain scientific issues have been relitigated each time a new OSHA standard for a carcinogen has been considered.[107] In particular, the question whether there is a safe exposure level to the carcinogen under consideration has arisen during each new rulemaking. Since no conclusive factual answer to this question has been available, OSHA has had to resolve this question as a matter of policy.[108] The constant reexamination of cancer-related issues has severely strained OSHA's resources and made its rulemaking a very slow process. As of 1979, OSHA had promulgated regulations for only nineteen of the great many potentially carcinogenic chemicals used in the workplace.[109]

---

should also be noted that benzene exposure has yet to be shown to cause leukemia in animals. 42 Fed. Reg. 22,516, 22,521 (1977). 43 Fed. Reg. 5,918, 5,932 (1978).

104. See note 84 *supra.*

105. McGarity, *supra* note 46, at 746.

106. *Id.*

107. 42 Fed. Reg. 54,148, 54,154 (1977).

108. *Id.*

109. *Id.* at 54,149. *See* McGarity, *supra* note 46, at 746.

B. OSHA's Attempt to Reduce These Problems

OSHA's response to its regulatory dilemma was its generic approach to regulating occupational exposure to carcinogens.[110] The policy is intended to make more efficient use of OSHA's resources than has been the case in the past, thus allowing for more active regulation. What the approach essentially does is foreclose debate on certain cancer-related issues and settle them, as a matter of policy, for all future rulemakings.[111] The approach leaves open other questions which will be addressed as each new substance is considered.[112]

For purposes of this article, the relevant issues which OSHA decided to treat as policy matters concern whether safe exposure levels to carcinogens exist and whether they can be found. On the strength of considerable scientific support, OSHA determined that carcinogens do not have safe or no-effect exposure levels.[113] Moreover, OSHA's general policy will be that even if such levels do exist, they presently cannot be identified by science.[114] On the basis of these policy judgments and the congressional mandate embodied in section 6(b)(5) of the Act, the Secretary concluded that he must set the "permissible exposure limit . . . as low as feasible" for any workplace substance found to be carcinogenic.[115] Since 0 ppm is assumed to be the only safe exposure level, the Secretary must limit exposure to a level as close to 0 ppm as industry can afford and achieve. When no safe exposure level to benzene could be ascertained from the available data, the Secretary adopted this approach and determined that occupational exposure had to be reduced to 1 ppm.

Under the generic approach, the Secretary is relieved from having to prove that all exposure levels above 0 ppm create some risk of cancer. He is also not required to estimate the risk present at any particular exposure level.[116] When the scientific evidence establishes

---

110. Identification, Classification and Regulation of Toxic Substances Posing a Potential Carcinogenic Risk, 29 C.F.R. § 1990.101 (1980).

111. 42 Fed. Reg. 54,148, 54,154 (1977).

112. These questions are:

> (1) whether the Secretary correctly classified the toxic material according to the appropriate criteria; (2) whether the Secretary correctly decided that the classification should not be rebutted; (3) the determination of the lowest feasible occupational exposure, or whether there are suitable substitutes found that are less hazardous to humans than toxic materials; (4) the appropriateness and feasibility of the specific protective measures of the proposed standard and (5) the environmental impact arising from regulation of the toxic material.

Id. at 54,155.

113. *Id.* at 54,166.

114. *Id.* at 54,148.

115. *Id.*

116. *Id.* at 54,167.

that a substance is causally linked to cancer, the Secretary is authorized to reduce occupational exposure to the lowest feasible level without having to quantify the risk created by low-level exposure.

V. Circuit Court Review of Section 6(b)(5) Standards for Occupational Carcinogens

OSHA's generic approach to the regulation of carcinogens incorporates scientific concepts that are still in dispute. Among these concepts is OSHA's conclusion that any exposure level to a carcinogen above 0 ppm creates some risk of harm. Before the generic approach took effect, OSHA had applied this concept in standard-setting procedures for various carcinogens, including benzene.[117] Prior to the Fifth Circuit's review of the benzene regulation, three other circuits considered OSHA's approach to regulation under section 6(b)(5) of the Act.

This section will outline the split between the District of Columbia, the Second, and the Third Circuits on one hand, and the Fifth Circuit on the other. The section will begin with a brief description of the standard of review specified by the Act. Second, the decisions of the three circuits will be examined. Finally, the section will discuss the Fifth Circuit's consideration of the 1 ppm standard for benzene in *American Petroleum Institute v. Occupational Safety and Health Administration*.[118]

A. Section 6(f)'s Substantial Evidence Standard of Review

Section 6(f) of the Act[119] gives each United States circuit court of appeals the jurisdiction to review a petition challenging the validity of any OSHA regulation promulgated under section 6. Section 6(f) also specifies the standard of review circuit courts are to use as they review these regulations:

> The determinations of the Secretary shall be conclusive if supported by substantial evidence in the record considered as a whole.[120]

When the Secretary sets a particular standard under the authority granted in section 6, he makes determinations which are based on the available scientific and medical evidence. Section 6(f) requires

117. *Id.* at 54,149.
118. 581 F.2d 493 (5th Cir. 1978).
119. 29 U.S.C. § 655(f) (1976).
120. *Id.*

that all of these determinations be supported by substantial evidence in the record. If the reviewing court concludes that any of the determinations is not supported by substantial evidence, the court has the authority to set aside both the determination and the standard that is based on that determination.[121]

An example may be useful to indicate the relationship between sections 6(b)(5) and 6(f) of the Act. In order to promulgate a permanent standard under the authority granted in section 6(b)(5), the Secretary must find that the substance under consideration is toxic. Section 6(b)(5) restricts its regulatory mandate to toxic materials and harmful physical agents. If a finding of carcinogenicity by the Secretary is challenged, a circuit court will review that determination under the substantial evidence test prescribed in section 6(f). If the court concludes that the determination is not supported by substantial evidence, the court will set aside the section 6(b)(5) standard based on the determination.

B. The District of Columbia, the Second, and the Third Circuits: Their Review of Permanent Standards for Various Carcinogens

In *Industrial Union Department, AFL-CIO v. Hodgson*,[122] the District of Columbia Circuit considered a petition filed by unions whose members were exposed to asbestos dust. The petition requested that the court review the permanent OSHA standards which reduced the permissible concentration level for asbestos dust exposure from five fibers to two.[123] The Secretary knew that exposure to asbestos dust at high levels and for long periods of time could lead to asbestosis and cancers.[124] The Secretary also considered OSHA's policy judgment that there are no safe exposure levels for carcinogens, as well as the generally accepted scientific belief that the risk of cancer decreases as the exposure level is lowered.

The other available evidence was not conclusive. The primary issue during the hearings on the asbestos dust standard was whether the five fiber standard should be kept or be replaced by a two fiber standard. There were proponents on each side, and the evidence did not prove either side to be clearly correct.[125] In addition, the scientific

---

121. Synthetic Organic Chemical Manufacturers Ass'n v. Brennan, 503 F.2d 1155, 1156 (3d Cir. 1974), *cert. denied*, 420 U.S. 973 (1975).

122. 499 F.2d 467 (D.C. Cir. 1974).

123. The standard for occupational exposure to asbestos dust is codified at 29 C.F.R. § 1910.1001 (1980).

124. 37 Fed. Reg. 11,318 (1972).

125. 499 F.2d 467, 478-79 (D.C. Cir. 1974).

data was not reliable enough to permit the Secretary to predict the adverse health effects that would occur in workers exposed to either the two or the five fiber concentration level.[126] As a result, the decision to reduce the acceptable concentration level was not based on a factual determination. The Secretary knew that asbestos dust exposure presented a cancer risk but did not know the degree to which that risk would be reduced by lowering the permissible concentration level to two fibers. When he chose between the five fiber standard and the two fiber standard, the Secretary made a policy judgment which opted for increased protection of worker health.[127] Choosing the lower standard, the Secretary concluded that the Act does not require him to gamble with human lives when factual certainty is lacking.

As it reviewed the Secretary's decision to reduce the permissible concentration level to two fibers, the District of Columbia Circuit considered how the substantial evidence test prescribed in section 6(f) should be applied to an OSHA standard regulating occupational exposure to a carcinogen. First, the court accurately sketched the nature of the regulatory problem confronting OSHA.[128] The court recognized that because cancer-related questions "are on the frontiers of scientific knowledge,"[129] the Secretary lacks the evidence needed to make factual determinations. The Secretary must rely upon policy judgments as he answers these questions, which means that his findings in support of a standard consist of both factual determinations and policy judgments.[130] The *Hodgson* court responded to the dual nature of agency findings by altering its analysis according to the type of finding it was considering. For factual determinations, the court applied the traditional substantial evidence standard, examining the record to determine whether it supplied substantial support for those determinations.[131] For policy judgments, its test was different and focused on whether:

> the agency, given an essentially legislative task to perform, has carried it out in a manner calculated to negate the dangers of arbitrariness and irrationality in the formulation of rules for general application in the future.[132]

126. *Id.* at 475.
127. *Id.*
128. *Id.* at 474-75. See text and notes at notes 88-109 *supra.*
129. 499 F.2d 467, 474 (D.C. Cir. 1974).
130. *Id.* at 474-75.
131. *Id.* at 474.
132. *Id.* at 475 (*quoting* Automotive Parts and Accessories Ass'n v. Boyd, 407 F.2d 330, 338 (D.C. Cir. 1968)).

The *Hodgson* court approved the Secretary's policy judgment selecting the two fiber standard. Instead of searching the record to determine whether substantial evidence supported the Secretary's choice of the two fiber standard, the court evaluated the Secretary's choice in light of the congressional purpose embodied in the Act. The court found that the Secretary's decision was consistent with the Act's "overriding concern," which is the "protection of the health of employees."[133] The court suggested that if the Secretary errs in the selection of a permissible exposure level, the error must work in favor of enhanced protection of worker health.

Through its treatment of the Secretary's choice of the two fiber standard, the District of Columbia Circuit indicated that the Secretary is not required under the Act to quantify the health benefits expected to result from a lower standard. In order to determine the benefits that may be achieved by the two fiber standard, it would be necessary to estimate the number of workers who would develop cancer at a five fiber concentration level and at a two fiber concentration level. The difference—the number of cancers prevented by the reduction in exposure—equals the benefits. The *Hodgson* court noted that the cancer risks created by asbestos dust exposure at these levels could not be estimated,[134] and still upheld the Secretary's decision to lower the permissible concentration level. Hence, the District of Columbia Circuit did not demand an estimate of the risks or the expected benefits. The court determined that as long as the Secretary could reasonably conclude that the two fiber standard will enhance protection of worker health, he was authorized to make a policy judgment selecting that level.

Also, the District of Columbia Circuit interpreted the language in section 6(b)(5) which requires that a permanent standard be "feasible."[135] The petitioning unions argued that when the Secretary decided to postpone the effective date of the two fiber standard for four years, he improperly considered economic factors.[136] The court rejected this argument, stating that Congress did not intend for the Secretary to ignore economic considerations. The court concluded that a standard is infeasible if it would cause a general collapse of industrial employers.[137] On the other hand, the court determined that

133. 499 F.2d 467, 475 (D.C. Cir. 1974).
134. *Id.*
135. 29 U.S.C. § 655(b)(5) (1976).
136. 499 F.2d 467, 477 (D.C. Cir. 1974).
137. *Id.* at 478. The court wrote:

> Congress does not appear to have intended to protect employees by putting their employers out of business—either by requiring protective devices unavailable under

a standard may be economically feasible under section 6(b)(5) even though it causes substantial increases in an industry's production costs and forces an employer out of business.[138]

By identifying protection of worker health as the overriding concern of the Act, the District of Columbia Circuit indicated that scientific uncertainty should not ordinarily require postponement of an OSHA regulation that the Secretary has determined to be necessary to protect workers. A postponement for the sake of gathering more evidence would frustrate the Act's purpose, because workers would continue to be exposed to health risks that could prove to be great. When the Secretary is uncertain about the extent of the expected benefits, but believes that some will result, the District of Columbia Circuit advocated prompt regulation.

The Second Circuit has also applied the substantial evidence standard of section 6(f) to an OSHA regulation passed pursuant to section 6(b)(5). In *Society of Plastics Industry, Inc. v. OSHA*,[139] a petition was filed with the circuit court challenging the validity of a permanent OSHA standard which set the permissible exposure limit for vinyl chloride at 1 ppm. Having concluded that vinyl chloride was carcinogenic, the Secretary had selected a 1 ppm as the lowest exposure level that was economically and technologically feasible.[140] The petitioners were industrial manufacturers of vinyl chloride and vinyl chloride products. They raised five challenges to the standard, among which was the contention that the available evidence did not establish that a 1 ppm exposure limit was required by health and safety considerations.[141] Rejecting these challenges, the Second Circuit upheld the standard.[142]

When the petitioners contended that the 1 ppm standard was not justified by the available evidence, they raised arguments which were similar to those advanced by industry challengers of the benzene regulation.[143] The petitioners in *Society of Plastics Industry*,

---

existing technology or by making financial viability generally impossible.

138. *Id.* The court wrote:

> It would appear to be consistent with the purposes of the Act to envisage the economic demise of an employer who has lagged behind the rest of industry in protecting the health and safety of employees and is consequently financially unable to comply with new standards as quickly as other employers.

139. 509 F.2d 1301 (2d Cir. 1975), *cert. denied*, 421 U.S. 992 (1975).

140. The standard for occupational exposure to vinyl chloride is codified at 29 C.F.R. § 1910.1017 (1980).

141. 509 F.2d 1301, 1303 (2d Cir. 1975), *cert. denied*, 421 U.S. 992 (1975).

142. *Id.* at 1311.

143. In the benzene case, industry petitioners cited studies which indicated no excess incidence of leukemia at exposure levels below 100 ppm, and argued that a safe exposure level

Inc. v. OSHA argued that the 1 ppm standard was unnecessary because it was impossible to determine whether low-level exposure to vinyl chloride was safe or unsafe. They cited scientific studies which found no adverse health effects in workers exposed to vinyl chloride at levels below 200 ppm. Since exposure at levels well above 1 ppm had not been shown to be unsafe, the petitioners concluded that there was no need to reduce exposure to 1 ppm.[144]

In reviewing this challenge to the vinyl chloride standard, the Second Circuit adopted the *Hodgson* construction of section 6(f)'s substantial evidence test.[145] The court noted that if the overall policy goals of the Act are to be achieved, the Secretary must act even though some of his findings lack conclusive factual support.[146] The Second Circuit determined that when the "factual finger points . . . [but] does not include," the "command" of the Act is clear.[147]

> [I]t remains the duty of the Secretary to act to protect the workingman, and to act even in circumstances where existing methodology or research is deficient.[148]

Like the District of Columbia Circuit, the Second Circuit concluded that the Act reflects a basic policy preference in favor of regulatory action reasonably designed to protect the health of workers.

The Second Circuit found that the Secretary's choice of the 1 ppm standard for vinyl chloride was supported by "quite sufficient" evidence.[149] The Secretary determined that the record did not establish any exposure level as safe. The Secretary made a policy judgment that any exposure to vinyl chloride above 0 ppm was unsafe, and set the permissible exposure limit as close to 0 ppm as was feasible. The Second Circuit upheld the Secretary's reasoning, and emphasized what was at stake in the dispute over the validity of the 1 ppm standard: "it must be remembered that we are dealing here with human lives."[150]

The Second Circuit did not require an estimate of the expected benefits of the 1 ppm standard for vinyl chloride. Not knowing what

existed well above 10 ppm. See note 45 *supra*.

144. 509 F.2d 1301, 1303, 1308 (2d Cir. 1975), *cert. denied*, 421 U.S. 992 (1975).

145. *Id.* at 1304.

146. *Id.* at 1303-04.

147. *Id.* at 1308.

148. *Id.*

149. *Id.* The court also cited the results of an animal exposure study sponsored by the industry's own trade association. The study indicated that fatal liver angiosarcoma and other kidney and liver diseases occurred in animals at the 50 ppm level. *Id.*

150. *Id.*

health risks, if any, were created by low-level exposure,[151] the Secretary was only able to deduce that the reduction to 1 ppm would improve protection of worker health. As the Second Circuit applied section 6(f)'s substantial evidence test, this deduction was sufficient to support the Secretary's finding that the 1 ppm standard would achieve some health benefits.

The petitioners in *Society of Plastics Industry, Inc. v. OSHA* also contended that the 1 ppm standard was not technologically feasible as required by section 6(b)(5).[152] Rejecting this contention, the Second Circuit portrayed the Act as a technology-forcing statute. The court determined that a feasible standard under section 6(b)(5) may force employers to either improve technologies already in use or develop completely new technologies.[153]

In *Synthetic Organic Chemical Manufacturers Ass'n v. Brennan*,[154] the Third Circuit used section 6(f)'s substantial evidence standard to review a policy judgment made by the Secretary. The court reviewed permanent OSHA standards regulating, among other things,[155] employee exposure to mixtures containing one percent or more of ethyleneimine (EI). Industry petitioners argued that no substantial evidence existed in the record to support the Secretary's finding that EI was a human carcinogen.[156]

Before adopting the EI standard, the Secretary concluded that EI was carcinogenic in animals. However, there was no evidence indicating that EI was carcinogenic in humans as well. The Secretary had two regulatory alternatives: until conclusive evidence became available, he could treat EI as either carcinogenic or non-carcinogenic in humans.[157] If the Secretary adopted the latter approach, he would be unable to regulate the substance under section 6(b)(5). Adoption of the former approach would allow the Secretary to regulate EI as if it were a human carcinogen. The Secretary decided to treat EI as a human carcinogen, believing that to be the "responsible and correct" decision.[158] The Third Circuit approved the Secretary's decision, finding that he had "properly weighed the only

151. *Id.*
152. *Id.* at 1308-09.
153. *Id.* at 1309.
154. 503 F.2d 1155 (3d Cir. 1974), *cert. denied*, 420 U.S. 973 (1975).
155. These standards were applicable to 14 selected carcinogens, and are codified at 29 C.F.R. §§ 1910.1003-1910.1016 (1980).
156. 503 F.2d 1155, 1157 (3d Cir. 1974), *cert. denied*, 420 U.S. 973 (1975).
157. 39 Fed. Reg. 3,756, 3,758 (1974).
158. *Id.*

available alternatives."[159] Accordingly, the court rejected the petitioners' challenge.[160]

In reviewing the Secretary's decision to treat EI as a human carcinogen, the Third Circuit adopted the *Hodgson* construction of section 6(f).[161] The Secretary made a policy judgment, or "legislative policy decision," that if a substance was shown in two studies to be carcinogenic in animals, it must be treated as carcinogenic in man.[162] The Third Circuit examined the Secretary's judgment to determine whether it was consistent with the Act's language and purpose.[163] The court upheld the judgment, agreeing with the Secretary that section 6(b)(5) compelled him to treat EI as a human carcinogen.[164] Like the District of Columbia Circuit and the Second Circuit, the Third Circuit found that the Act requires the Secretary to resolve scientific uncertainty in favor of increased protection of workers.

In *American Iron and Steel Institute v. OSHA*,[165] the Third Circuit Court again considered an OSHA regulation promulgated under section 6(b)(5). Coke manufacturers and their trade associations petitioned the court to review the Secretary's permanent standard for coke oven emissions, which reduced the permissible exposure limit to the lowest feasible level.[166] The petitioners challenged the limit, arguing that it was invalid because there was no substantial evidence in the record to justify it.[167] The Third Circuit rejected this challenge and upheld the Secretary's decision.[168]

The court required a quantification of neither the expected benefits of the standard nor the risk presented by low-level exposure to coke oven emissions. While the Secretary provided a more detailed examination of the possible benefits than he had for the asbestos dust and vinyl chloride standards, he found that it was not appropriate "to quantify even a range of the benefits" of the lower standard for coke oven emissions.[169] Recognizing that an estimate of the expected benefits was unavailable, the Third Circuit allowed the

---

159. 503 F.2d 1155, 1160-61 (3d Cir. 1974), *cert. denied*, 420 U.S. 973 (1975).
160. *Id.* at 1161.
161. *Id.* at 1158, 1159-60. See text at notes 128-32 *supra*.
162. 503 F.2d 1155, 1158 (3d Cir. 1974), *cert. denied*, 420 U.S. 973 (1975).
163. *Id.* at 1158, 1159.
164. *Id.* at 1159, 1160-61.
165. 577 F.2d 825 (3d Cir. 1978), *cert. dismissed*, 49 U.S.L.W. 3145 (1980).
166. The standards for occupational exposure to coke oven emissions are codified at 29 C.F.R. § 1910.1029 (1980).
167. 577 F.2d 825, 827 (3d Cir. 1978), *cert. dismissed*, 49 U.S.L.W. 3145 (1980).
168. *Id.* at 833, 840.
169. 41 Fed. Reg. 46,742, 46,750 (1976).

Secretary to reduce the permissible exposure limit on the basis of the conclusion that the reduction would achieve some health benefits.

The Third Circuit considered only section 6(b)(5) of the Act when it reviewed the Secretary's standard for coke oven emissions. As interpreted by the court, section 6(b)(5) required the Secretary to reduce the permissible exposure limit to the "lowest possible" level after he found that no safe exposure level existed above 0 ppm.[170] The court determined that the only constraint on the Secretary's standard-setting authority was section 6(b)(5)'s "requirement of feasibility, both technological and economic."[171] The Third Circuit concluded that because the coke oven emissions standard met the feasibility requirement, the Secretary had acted within his statutory authority when he promulgated the standard.[172]

The decisions of the District of Columbia, the Second, and the Third Circuits reveal a similarity in approach to the review of section 6(b)(5) standards for occupational carcinogens. The Second and Third Circuits adopted the District of Columbia Circuit's construction of the substantial evidence standard specified in section 6(f).[173] These three circuits also treated the Secretary's finding that a standard would achieve some health benefits in the same way. In each case, the Secretary was unable to estimate the cancer risks created by low-level exposure. Thus, he could not estimate the number of cancers that would be prevented by a reduction in exposure. But he did conclude that the reduction would better protect the health of workers exposed to the carcinogen. The three circuits allowed the Secretary to regulate on the basis of this conclusion, and suggested that scientific uncertainty must be resolved in favor of enhanced protection of the affected workers. Since the Act is primarily concerned with the protection of workers,[174] and commands the Secretary to act toward that end even when the record is incomplete and inconclusive,[175] these circuits did not make quantification of the risks or the expected benefits a prerequisite to regulation under section 6(b)(5).

Another similarity among the decisions of these circuits was the

---

170. 577 F.2d 825, 832 (3d Cir. 1978), *cert. dismissed*, 49 U.S.L.W. 3145 (1980).

171. *Id.*

172. *Id.* at 833.

173. See text at notes 128-32 *supra*.

174. Industrial Union Department, AFL-CIO v. Hodgson, 499 F.2d 467, 475 (D.C. Cir. 1974).

175. Society of Plastics Industry, Inc. v. OSHA, 509 F.2d 1301, 1308 (2d Cir. 1975), *cert. denied*, 421 U.S. 992 (1975).

absence of any mention of section 3(8) of the Act. That section defines an occupational safety and health standard as a standard that is "reasonably necessary or appropriate" to provide safe or healthful workplaces.[176] Reviewing section 6(b)(5) standards, these circuits only focused on whether that section's requirements were met (*e.g.*, feasibility). The courts did not conclude that section 3(8) alters the Secretary's regulatory duty as outlined in section 6(b)(5). Thus, the Fifth Circuit's review of the benzene regulation represented a distinct change.

C. The Fifth Circuit's Review of the Benzene Regulation in AMERICAN PETROLEUM INSTITUTE *v.* OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

1. The Reasoning of the Fifth Circuit

The Secretary promulgated the permanent benzene standard of 1 ppm on February 3, 1978, and published the standard on February 10, 1978. He selected March 13, 1978, as the effective date of the standard. On February 2 and 3, the American Petroleum Institute (API) filed petitions for review of the standard in the Fifth Circuit. Other producers and users of benzene and benzene-containing products either intervened on API's behalf or filed original petitions for review in other circuits. These petitions were transferred to the Fifth Circuit and consolidated with the API case. The Industrial Union Department, AFL-CIO, intervened on OSHA's behalf in favor of the 1 ppm exposure limit for benzene.[177]

The petitioners raised a number of challenges to the benzene regulation, the most important of which focused on the Secretary's reduction of the permissible exposure limit from 10 ppm to 1 ppm. The petitioners contended that there was no substantial evidence in the record to show that the reduction was reasonably necessary or appropriate to provide safe or healthful employment and places of employment.[178] Invoking section 3(8) of the Act,[179] the petitioners argued that the section should be construed as the Fifth Circuit had earlier construed ostensibly similar provisions of the Consumer Product Safety Act (CPSA) in *Aqua Slide 'N' Dive Corp. v. Consumer Product Safety Commission.*[180] The petitioners asserted that

176. 29 U.S.C. § 652(8) (1976).
177. American Petroleum Institute v. OSHA, 581 F.2d 493, 499 (5th Cir. 1978).
178. *Id.* at 500.
179. 29 U.S.C. § 652(8) (1976).
180. 569 F.2d 831 (5th Cir. 1978).

section 3(8), read according to *Aqua Slide*, imposes two requirements upon the Secretary as he sets a standard under the Act. The Secretary must attempt to assess the expected benefits of the standard, and then determine whether those benefits justify the costs to industry of compliance with the standard. The petitioners concluded that when the Secretary selected 1 ppm as the permissible exposure limit for benzene, he failed to meet either of the requirements that section 3(8) makes prerequisites to regulation. Consequently, the petitioners requested that the 1 ppm standard be set aside.[181]

In reviewing this challenge, the Fifth Circuit accepted the interpretation of section 6(f) established by the District of Columbia Circuit in *Industrial Union Department, AFL-CIO v. Hodgson*. The Fifth Circuit recognized that policy judgments, unlike factual determinations, can neither be verified nor refuted by the record. The court noted that while policy judgments must be subjected to judicial scrutiny, they will survive this scrutiny if they are compatible with the Act's language and purpose.[182]

Turning to the relevant statutory language, the Fifth Circuit examined the scope of regulatory authority granted to the Secretary under section 6(b)(5). The court emphasized the statutory constraints which limit the Secretary's authority under section 6(b)(5), and determined that the section does not give the Secretary the authority to adopt, without any consideration of the costs involved, standards designed to make workplaces absolutely free of risk.[183] Section 6(b)(5) standards must be feasible, and as they are formulated, the Secretary must consider certain kinds of information.[184] The Fifth Circuit suggested that because Congress statutorily required consideration of this information, it intended that the Secretary regulate according to what he knows, rather than according to what he is unsure of.[185] Most important, the Fifth Circuit agreed with the petitioners that section 3(8) limits the Secretary's authority to promulgate regulations for toxic materials under section 6(b)(5).[186]

---

181. 581 F.2d 493, 501 (5th Cir. 1978).

182. *Id.* at 497.

183. *Id.* at 502.

184. 29 U.S.C. § 655(b)(5) (1976). Section 6(b)(5) requires that the Secretary use the "best available evidence." Standards are to be developed by relying on "research, demonstrations, experiments, and such other information as may be appropriate." The Secretary is to consider "experience gained under this and other health and safety laws" as well.

185. 581 F.2d 493, 504 (5th Cir. 1978).

186. *Id.* at 502.

To specify the requirements imposed by section 3(8), the Fifth Circuit turned to the decision invoked by the petitioners, *Aqua Slide 'N' Dive Corp. v. Consumer Product Safety Commission.* In that case, the Fifth Circuit considered a petition challenging the validity of a standard for swimming pool slides promulgated by the Consumer Product Safety Commission (Commission). The Consumer Product Safety Act (CPSA),[187] like the Occupational Safety and Health Act, specifies a substantial evidence test for judicial review of findings made by the Commission.[188] The *Aqua Slide* petitioners contended that there was no substantial evidence in the record to support the Commission's finding that its standard was "reasonably necessary to eliminate or reduce an unreasonable risk of injury."[189]

Two provisions of the CPSA were relevant to the Fifth Circuit's disposition of this petition. First, the court considered section 7(a), which provides that the requirements imposed by a Commission standard must be "reasonably necessary to prevent or reduce an unreasonable risk of injury associated with [a consumer] product."[190] The second provision, section 9(c), requires that the Commission make certain findings before it promulgates any regulation. Among the required findings is one which determines that the regulation is "reasonably necessary to eliminate or reduce an unreasonable risk of injury."[191] The Fifth Circuit set aside the challenged aspects of the Commission's standard for swimming pool slides, finding that the Commission failed to meet the duty imposed upon it by sections 7(a) and 9(c).[192]

In *American Petroleum Institute v. Occupational Safety and Health Administration,* the Fifth Circuit concluded that the duty which exists in the CPSA is also present in the Occupational Safety and Health Act. To reach this conclusion, the Fifth Circuit determined that the requirements imposed by sections 7(a) and 9(c) of the CPSA are precisely similar to those imposed by section 3(8) of the Act.[193] In addition, the court found that the CPSA and the Act have parallel purposes. The Fifth Circuit noted that Congress intended the CPSA "to protect consumers from dangerous products," and intended the Act "to protect workers from dangerous conditions of employment."[194] Because of these statutory similarities, the Fifth

187. 15 U.S.C. §§ 2051-2081 (1976).
188. *Id.* § 2060(c).
189. 569 F.2d 831, 834-35 (5th Cir. 1978).
190. 15 U.S.C. § 2056(a)(1).
191. 15 U.S.C. § 2058(c)(2)(A).
192. 569 F.2d 831, 835, 844 (5th Cir. 1978).
193. 581 F.2d 493, 502 (5th Cir. 1978).

Circuit used *Aqua Slide* as a guide when it examined whether OSHA had adequately shown that the 1 ppm standard for benzene was reasonably necessary to provide safe workplaces.[195]

The Fifth Circuit described the duty which the CPSA imposes upon the Commission, and which section 3(8) likewise imposes upon the Secretary. Before either agency regulates, it must establish that a hazard is present and that the regulation will reduce the risk of harm.[196] The more important requirement, however, is that the agency must weigh the benefits expected to result from the regulation against the costs of compliance that the regulation will impose upon industry. The Fifth Circuit noted that while an elaborate cost-benefit analysis is not necessary, the agency must establish that the expected benefits bear a reasonable relationship to the costs.[197] The court indicated that the agency will not be able to determine whether this reasonable relationship exists unless it first estimates the expected benefits and costs of the regulation.[198]

The Fifth Circuit applied these section 3(8) requirements to the record supporting the benzene regulation, and concluded that they were not satisfied by the Secretary's findings.[199] The Secretary did estimate the expected compliance costs of the 1 ppm standard, and found it to be economically feasible. The Fifth Circuit did not set aside this finding. However, the Secretary's finding that the benefits from the 1 ppm exposure limit may be, or are likely to be, appreciable, did not survive the court's review. The Fifth Circuit concluded that this finding was not supported by substantial evidence in the record.[200] As one prerequisite to regulation under section 6(b)(5), the court required that the Secretary provide a "rough but educated" estimate of the benefits expected to be achieved by the reduction to 1 ppm.[201] Consequently, the Fifth Circuit set aside both the Secretary's finding of appreciable benefits and the 1 ppm standard for benzene.

2. Differences Between the Fifth Circuit and the Other Three Circuits

Because of its application of section 3(8) to section 6(b)(5) and its interpretation of section 3(8), the Fifth Circuit imposed a require-

194. *Id.*
195. *Id.*
196. *Id.* at 502-03.
197. *Id.* at 503.
198. *Id.*
199. *Id.* at 503-04, 505.
200. *Id.* at 503.
201. *Id.* at 504.

ment upon the Secretary which the District of Columbia, the Second, and the Third Circuits did not. That is, the Secretary must establish that the expected benefits bear a reasonable relationship to the costs before he can validly promulgate a regulation. By making this finding a prerequisite to regulation, the Fifth Circuit also required that the Secretary estimate the extent of the expected benefits. This, too, was inconsistent with the approach used by the other circuits. These differences will be considered in reverse order.

a. The Fifth Circuit Required an Estimate of the Expected Benefits of a Regulation

The Fifth Circuit did not hold that the Secretary's finding of appreciable benefits was unsupported. The court upheld the Secretary's finding that exposure to benzene at a 10 ppm level creates some risk of leukemia.[202] The Fifth Circuit determined that the Secretary was justified in finding that all exposure levels above 0 ppm pose some risk because that opinion is shared by some, although not all, scientific experts. Moreover, the court concluded that since there is scientific agreement that the risk of cancer decreases as the exposure level is lowered, the Secretary had an adequate basis on which to deduce that the reduction in benzene exposure from 10 ppm to 1 ppm would provide greater protection of workers.[203] However, the court noted that this deduction, while rational, did not necessarily mean that the 1 ppm standard would yield measurable benefits in terms of lives saved or cancers prevented. The Secretary's deduction that some benefits would result from the 1 ppm standard did not provide the "rough but educated" estimate the Fifth Circuit demanded.[204]

If the District of Columbia Circuit, the Second Circuit, or the Third Circuit had reviewed the 1 ppm standard, each probably would have upheld the Secretary's reasoning. Those courts were satisfied with the Secretary's deduction that the regulation under consideration would enhance protection of worker health, thus achieving some health benefits. Like the Fifth Circuit, the Second and the Third Circuits upheld the Secretary's findings that any exposure above 0 ppm created some risk, and that a reduction in exposure would better protect the health of workers.[205] On the basis of these findings alone, the

202. *Id.* at 503.
203. *Id.*
204. *Id.* at 503, 504.
205. See text at notes 149-51, 170-72 *supra.*

circuits permitted the Secretary to reduce the permissible exposure limit to a feasible level as near as possible to 0 ppm. They did not conclude that an estimate of the expected benefits is a prerequisite to regulation.

The split over whether the Secretary is required to estimate the expected benefits reflects a more fundamental division between the Fifth Circuit, and the District of Columbia, the Second, and the Third Circuits. The latter three found in the Act a strong policy preference in favor of regulation that is reasonably designed to protect workers, even when that regulation is based on inconclusive scientific evidence. The Fifth Circuit severely weakened that policy preference by demanding considerably more factual support for the Secretary's regulation. The Fifth Circuit did not allow the Secretary to resolve the scientific uncertainty about the expected benefits in favor of increased protection of the affected workers. So, to a greater degree than its predecessors, the Fifth Circuit stressed the policy in the Act which requires that OSHA standards be grounded as much as possible on factual findings.[206]

Although the Fifth Circuit required greater factual support for the Secretary's finding of appreciable benefits, the court argued that OSHA would not have to wait for the deaths of workers exposed to less than 10 ppm before it could validly reduce the permissible exposure limit.[207] The Fifth Circuit indicated that the needed factual support may be provided by either of two methods. First, future studies might supply adequate information to allow the charting of a dose-response curve that could be extrapolated to low exposure levels.[208] Second, animal studies might permit the Secretary to identify the probable health risks to humans presented by low-level benzene exposure.[209]

With the data OSHA now has, it cannot estimate the leukemia risks created by exposure to benzene at specific levels. In order to identify these risks, OSHA would have to undertake prospective epidemiological studies in which workers would be exposed to benzene at various levels.[210] Only with this approach will OSHA accumulate

---

206. 581 F.2d 493, 504 (5th Cir. 1978). The court wrote: "By requiring the consideration of such kinds of information, Congress provided that OSHA regulate on the basis of knowledge rather than on the unknown." See text and notes at notes 184-85 *supra*.

207. 581 F.2d 493, 504 (5th Cir. 1978).

208. *Id.*

209. *Id.*

210. McGarity, *supra* note 46, at 805 n.417. Animal studies would seem to be of little use in providing an estimate of the expected benefits, because such studies have not yet shown that

the data (*i.e.*, leukemia risks associated with particular exposure levels) that is needed to construct a dose-responsive curve. Unfortunately, this approach makes the accumulation of data dependent upon the exposed workers developing leukemia. Since science has yet to agree upon a single theory of extrapolation from high exposure levels to low ones, it may also be necessary to do epidemiological studies of the leukemia risk at low levels (*i.e.*, 10 ppm and 1 ppm). By requiring an estimate of the expected benefits, the Fifth Circuit may well have required that OSHA postpone regulation until workers develop leukemia because of low-level exposure to benzene.

b. The Fifth Circuit Required that the Expected Benefits of a Regulation bear a Reasonable Relationship to its Costs

According to the Fifth Circuit, the Secretary must provide substantial evidence showing that the expected benefits of a regulation bear a reasonable relationship to its costs. The Fifth Circuit found the requirement in section 3(8), which it interpreted in accord with its earlier construction of the CPSA in *Aqua Slide*.[211] The court's use of *Aqua Slide* as a guide was not appropriate.

The language which the Occupational Safety and Health Act and the CPSA share in common requires that agency standards be "reasonably necessary" to achieve certain policy goals. The *American Petroleum Institute* court interpreted the *Aqua Slide* decision as holding that the CPSA's "reasonably necessary" language requires the Commission to establish that a reasonable relationship exists between a regulation's costs and benefits. At one point in its opinion, the *Aqua Slide* court did suggest that the CPSA's "reasonably necessary" language compels the Commission to make a close examination of the effect that a regulation would have on a consumer product's utility and market cost.[212] However, the proper interpretation of *Aqua Slide* seems to be that the cost-benefit requirement is imposed because of the language in the CPSA which directs the Commission to protect the public from "an *unreasonable risk* of injury associated with [a consumer] product."[213]

---

benzene exposure is causally linked to the development of leukemia in animals. 42 Fed. Reg. 22,516, 22,521 (1977); 43 Fed. Reg. 5,918, 5,932 (1978).

211. See text at notes 187-98 *supra*.

212. 569 F.2d 831, 844 (5th Cir. 1978). The court stated:

> In evaluating the "reasonable necessity" for a standard, the Commission has a duty to take a hard look, not only at the nature and severity of the risk, but also at the potential the standard has for reducing the severity or frequency of the injury, and the effect the standard would have on the utility, cost or availability of the product.

213. 15 U.S.C. § 2056(a)(1) (1976) (emphasis supplied).

The Fifth Circuit in *Aqua Slide* found no definition of "reasonably necessary" in the CPSA. From that absence, the court inferred that Congress intended that the Commission and the courts define the language on a case-by-case basis.[214] The Fifth Circuit also determined that the "reasonably necessary" requirement is tied in with the statutory language in the CPSA which requires the Commission to protect the public from "an unreasonable risk of injury."[215] The court noted that the only way to assess whether a Commission standard is "reasonably necessary" is in light of the risk created by the particular product under consideration.[216] Since the reasonable necessity of a standard depends upon the reasonableness of the risk being addressed, and since the risk will be different from product to product, the CPSA allows the Commission to define "reasonably necessary" according to the circumstances of each case.

The *Aqua Slide* court found a firm definition of "unreasonable risk" in the CPSA's legislative history.[217] The court recognized that under the CPSA, the Commission must assess the reasonableness of a risk by weighing certain factors. On one side, the Commission must evaluate both the severity of the injury that may be caused by use of the product, and the likelihood that the product will cause such an injury. On the other, the Commission is to consider the costs that will be imposed upon consumers[218] and manufacturers by the proposed regulation. A risk is unreasonable if the former (the severity and likelihood of injury due to use of the product) outweighs the latter (the costs to consumers and manufacturers caused by the regulation).[219] If the risk is unreasonable, the Commission may promulgate a regulation that is "reasonably necessary" to reduce or eliminate that risk. If, however, the risk is reasonable, the Commis-

---

214. 569 F.2d 831, 839 (5th Cir. 1978).

215. *Id.*

216. *Id.* The court wrote that "the necessity for the standard depends upon the nature of the risk. . . ."

217. *Id.*

218. *Id.* The court noted that the "legislative history specifies the costs to consumers that are to be considered: increases in price, decreased availability of a product, and also reductions in product usefulness," H.R. REP. NO. 1153, 92d Cong., 2d Sess. 33 (1972).

219. 569 F.2d 831, 839 (5th Cir. 1978). The court wrote that the "reasonableness of the risk is a function of the burden a standard would impose on a user of the product." The Fifth Circuit also quoted Forester v. Consumer Product Safety Commission, in which the District of Columbia Circuit wrote:

> The requirement that the risk be "unreasonable" necessarily involves a balancing test like that familiar in tort law: The regulation may issue if the severity of the injury that may result from the product, factored by the likelihood of the injury, offsets the harm the regulation itself imposes upon manufacturers and consumers.

559 F.2d 774, 789 (D.C. Cir. 1977).

sion has no authority under the CPSA to regulate it.[220]

By formulating this definition of "unreasonable risk," the *Aqua Slide* court indicated that the CPSA's "unreasonable risk" language, not its "reasonably necessary" language, forces the Commission to weigh the expected benefits and costs of a regulation. Thus, the *American Petroleum Institute* court's use of *Aqua Slide* as a guide to construing section 3(8)'s "reasonably necessary or appropriate" language was mistaken. That is the view expressed by the District of Columbia Circuit in *American Federation of Labor, etc. v. Marshall*,[221] a case decided after *American Petroleum Institute v. Occupational Safety and Health Administration.*

In *American Federation of Labor*, the District of Columbia Circuit reviewed an industry petition challenging the validity of a permanent OSHA standard regulating exposure to cotton dust. The court found substantial evidence in the record to support the Secretary's finding that the cotton dust standard was economically feasible.[222] However, the petitioners argued that there is a statutory constraint upon the Secretary's standard-setting authority in addition to the feasibility requirement of section 6(b)(5). The petitioners contended that the Secretary has no authority under section 6(b)(5) to promulgate a standard without making a formal cost-benefit analysis.[223] The petitioners suggested that this requirement is imposed upon the Secretary either by section 6(b)(5)'s feasibility requirement or by section 3(8)'s "reasonably necessary or appropriate" language. In support of their interpretation of section 3(8), the petitioners cited *American Petroleum Institute v. Occupational Safety and Health Administration.*[224]

The District of Columbia Circuit rejected the petitioners' contention, and agreed with OSHA that section 6(b)(5) regulations are constrained "only by the limits of feasibility."[225] The court adopted the

220. The court noted that the Senate report cited the example of a sharp knife in order to indicate how Congress wanted the Commission to assess the reasonableness of a risk. S. REP. No. 749, 92d Cong., 2d Sess. 6-7 (1972). The knife is capable of causing injury, but that risk is reasonable because it can only be eliminated by dulling the blade, which would also make the knife useless to consumers. The costs to consumers (*i.e.*, elimination of utility value) outweigh the benefits (*i.e.*, reduced risk of injury). However, that same knife in a child's silverware set might pose an unreasonable risk, because the knife's sharp edge has no utility value for children. Dulling the blade would not cost the consumers (*i.e.*, children) more than it would benefit them. 569 F.2d 831, 839 (5th Cir. 1978).

221. 617 F.2d 636 (D.C. Cir. 1979).

222. *Id.* at 662.

223. *Id.*

224. *Id.* at 665 n.169.

225. *Id.* at 663.

Hodgson construction of section 6(b)(5)'s feasibility requirement, which places no duty upon the Secretary to make a cost-benefit analysis.[226] In addition, the court did not accept the petitioners' interpretation of section 3(8), finding their reliance on *American Petroleum Institute v. Occupational Safety and Health Administration* to be "especially unpersuasive."[227] The court determined that the *American Petroleum Institute* decision was inappropriately based on the *Aqua Slide* decision, which construed "an entirely different statutory scheme." The District of Columbia Circuit noted that the CPSA's "unreasonable risk" language requires a balancing of costs and benefits. The court concluded that because section 3(8) of the Act contains no "unreasonable risk" language, it does not compel the Secretary to weigh costs and benefits prior to regulation.[228]

As further support for its use of *Aqua Slide* as a guide to construing section 3(8) of the Act, the Fifth Circuit noted that the CPSA and the Act have parallel purposes. The court reasoned that because these Acts require the protection of their intended beneficiaries (*i.e.*, consumers under the CPSA, and workers under the Act), Congress intended that these Acts impose the same requirement (*i.e.*, weigh costs and benefits) upon the agencies which implement them.[229] While these Acts do have protective purposes, the Fifth Circuit overlooked the fact that the Commission and OSHA face different considerations as they promulgate regulations designed to achieve that protection.

When the Commission regulates, it is often faced with the fact that a certain attribute of a consumer product presents both a risk of injury to its user and provides that user with a benefit (*e.g.*, sharp edge of a knife).[230] The risk created by the knife's edge must be considered reasonable because a regulation which eliminated the risk would cost consumers more than it would benefit them.[231] Thus, the Commission is obliged to avoid regulation and allow consumers to decide whether the benefits gained by using the knife are worth the risk of injury created.

Different factors influence OSHA's regulation. First, unlike consumers, workers are ordinarily unable to either estimate or avoid the

226. *Id.* at 665 n.168.
227. *Id.* at 665 n.169.
228. *Id.* at 663, 665 n.169.
229. 581 F.2d 493, 502 (5th Cir. 1978).
230. Brief for Federal Parties at 47 n.38, Industrial Union Department v. American Petroleum Institute, 448 U.S. 607 (1980).
231. See note 220 *supra*.

health risks created by conditions in the workplace.[232] Second, when a workplace substance creates a risk of harm to workers, it usually does not also provide those workers with a benefit. The benefits which result from non-regulation by OSHA (lower production costs) go primarily to employers and consumers. So, there will be instances when the Commission's decision not to regulate a product that creates a risk of injury will actually benefit the consumers using that product. However, workers are not likely to benefit from OSHA's decision not to regulate a toxic substance which creates a risk of material health impairment.[233]

By focusing solely on statutory purposes, the Fifth Circuit neglected the practical differences which distinguish regulation of hazardous consumer products from regulation of hazardous workplace conditions. Thus, the court's reasoning was unconvincing. Because Congress included "unreasonable risk" language in the CPSA but not in the Act, the more plausible conclusion is that Congress recognized these practical differences and therefore imposed different statutory requirements upon the Commission than it imposed upon OSHA.

c. Did the Fifth Circuit Distinguish its Decision from Those Circuit Court Decisions Which Preceded it?

The Fifth Circuit refused to reconcile its decision with those reached by the District of Columbia, the Second, and the Third Circuits.[234] The court suggested that a critical analysis of this precedent would not have been helpful in reviewing the record supporting the benzene regulation. Because the earlier cases were decided on their own records, the Fifth Circuit determined that the conclusions reached by those circuits would shed no light upon the sufficiency of the evidence supporting the 1 ppm standard.[235]

This attempt by the Fifth Circuit to distinguish its opinion from the others was unsuccessful. While there were factual differences among the records involved, it was nonetheless clear that the three circuits did not demand an estimate of the expected benefits from the Secretary. The Fifth Circuit required this estimate, and concluded that the Secretary's deduction that the 1 ppm standard would achieve some health benefits was not sufficient.

---

232. 617 F.2d 636, 665 n.169 (D.C. Cir. 1979).

233. Comment, *Assessing Regulatory Costs and Benefits: Fifth Circuit Vacates OSHA Benzene Standard*, 8 ENVIR. L. REP. 10250, 10254 (1978).

234. 581 F.2d 493, 505 (5th Cir. 1978).

235. *Id.*

With this decision, a split developed between the Fifth Circuit on one hand, and the District of Columbia, the Second, and the Third Circuits on the other. On writ of certiorari, the United States Supreme Court agreed to review the Fifth Circuit's decision.

VI. THE SUPREME COURT'S DECISION IN *Industrial Union Department, AFL-CIO v. American Petroleum Institute*

In reviewing the Fifth Circuit's decision, the Supreme Court was confronted with the following question: were the findings made by the Secretary sufficient to justify a reduction of the permissible exposure limit for benzene from 10 ppm to 1 ppm? To address the question, the Court had to consider the split between the Fifth Circuit and the other three circuits. That split suggested alternative approaches to reviewing the inconclusive scientific evidence upon which the Secretary based the benzene regulation. The Supreme Court was obliged to determine whether to require an estimate of the expected benefits, or to allow the Secretary to promulgate the 1 ppm standard on the basis of the finding that a reduction in exposure would achieve some health benefits.

The plurality, whose opinion was written by Justice Stevens and joined in by Chief Justice Burger and Justice Stewart, opted for an approach closer to the former. The plurality found in section 3(8) a threshold requirement that the Secretary must meet prior to promulgating a standard under section 6(b)(5). The plurality determined that the Secretary must find that the toxic substance under consideration creates a significant risk of harm in the workplace at the present exposure limit.[236] Like the Fifth Circuit, the plurality construed section 3(8) to limit the Secretary's standard-setting authority under section 6(b)(5). Also like the Fifth Circuit, the plurality required greater factual evidence than was available in the record supporting the benzene regulation.

The dissent, written by Justice Marshall and joined in by Justices Brennan, White, and Blackmun, adopted the approach used by the District of Columbia, the Second, and the Third Circuits. Disputing both the plurality's application of section 3(8) to section 6(b)(5) and its interpretation of section 3(8), the dissent concluded that the Secretary's findings were sufficient to support the 1 ppm standard.[237] Since the Secretary found that the 1 ppm standard

236. 448 U.S. 607, 642 (1980) (plurality opinion).
237. *Id.* at 706 (dissenting opinion).

would better protect the workers against the leukemia hazard posed by benzene exposure, the dissent was convinced that the regulation should not be postponed.[238]

As a result, the plurality and the dissent reached different conclusions about the validity of the 1 ppm standard. The former, consisting of three Justices, found that the Secretary exceeded his statutory authority in promulgating the 1 ppm standard.[239] The latter, consisting of four Justices, concluded that he acted within his authority.[240] Justice Powell filed a separate opinion, in which he concurred in part with the plurality's reasoning and with its judgment.[241] Justice Rehnquist, in a separate opinion, concurred in the plurality's judgment as well.[242] Consequently, the Fifth Circuit's decision setting aside the 1 ppm standard was affirmed.[243]

The Supreme Court refused to consider the Fifth Circuit's conclusion that the Act requires the Secretary to establish that a reasonable relationship exists between the expected costs and benefits of a regulation. The plurality found that the Secretary had not made the required threshold finding that exposure to benzene at a 10 ppm level creates a significant risk of leukemia.[244] This necessarily meant that the Secretary lacked the statutory authority to promulgate a lower standard for benzene. There was therefore no reason for the plurality to decide whether the Act imposes the further requirement of a reasonable relationship between costs and benefits.[245]

Justice Stevens and Justice Marshall each examined the record upon which the Secretary based the benzene regulation. While these Justices displayed different attitudes toward this evidence, they accepted all the findings made by the Secretary.[246] Despite this, they

238. *Id.* at 707-08 (dissenting opinion).

239. *Id.* at 659 (plurality opinion).

240. *Id.* at 707-08 (dissenting opinion).

241. *Id.* at 664 (Powell, J., concurring in part and in the judgment).

242. Because Justice Rehnquist's opinion did not focus on the principal issues which divided the plurality and the dissent, it will not be discussed in any detail. Justice Rehnquist would invalidate the first sentence of section 6(b)(5) of the Act, finding it to be an "unconstitutional delegation[ ] of legislative authority." *Id.* at 672. As a result, Justice Rehnquist concurred in the judgment setting aside the 1 ppm standard for benzene.

243. *Id.* at 662 (plurality opinion).

244. *Id.* at 653 (plurality opinion).

245. *Id.* at 615, 639-40 (plurality opinion); *id.* at 720 (dissenting opinion). The Supreme Court has concluded that the Act does not require a cost-benefit analysis. American Textile Manufacturers Institute, Inc. v. Donovan, 49 U.S.L.W. 4720 (1981).

246. Justice Stevens emphasized that even though the record supporting the benzene regulation had been more thoroughly searched than is customary, he had rejected none of the Secretary's factual findings. 448 U.S. 607, 658-59 (1980) (plurality opinion). He expressed "no opinion on what factual findings this record might support." *Id.* at 659.

reached different conclusions about the validity of the 1 ppm standard. Their different conclusions about the validity of the 1 ppm standard were the result of their disagreement over the prerequisites to regulation which the Act imposes upon the Secretary.

A. The Plurality's Reasoning

For the plurality, Justice Stevens interpreted the Act to require the Secretary to establish, as a threshold matter, that the toxic substance under consideration creates a significant health risk at the present exposure limit. The benzene regulation was set aside because the record did not establish, factually, that 10 ppm exposure to benzene creates a significant risk of leukemia.

The plurality's holding was primarily based on its construction of sections 3(8) and 6(b)(5) of the Act. Justice Stevens determined that section 3(8) applies to section 6(b)(5).[247] Unless the Secretary can establish that a section 6(b)(5) standard is "reasonably necessary or appropriate to provide safe or healthful employment or places of employment," he is without statutory authority to enact it.[248] Because of section 3(8)'s language ("to provide" safe workplaces), Justice Stevens concluded that section 3(8) implicitly requires the Secretary to find, before regulating, that workplaces are not safe.[249] As Justice Stevens understood Congress' intent, "safe" is not defined as risk-free. Since everyday activities are considered safe even though they create some risk of material health impairment (*e.g.*, driving a car), a workplace is not rendered unsafe simply because it presents some risk of harm. For purposes of the Act, Justice Stevens concluded that a workplace is not unsafe unless it poses a significant health risk to workers.[250]

Justice Stevens' definition of "safe" was necessary to his reasoning because safe workplaces represent the goal at which the Secretary is to aim as he promulgates standards. A standard cannot be "reasonably necessary or appropriate" to provide safe workplaces

---

Justice Stevens concluded that the Secretary based the 1 ppm standard on assumptions and on "a special policy for carcinogens." *Id.* Justice Marshall concluded that when the Secretary reduced benzene exposure to 1 ppm, he relied on findings which were supported by substantial evidence. *Id.* at 689 (dissenting opinion). Nonetheless, as noted in the text, the actual dispute between the plurality and the dissent focused on the prerequisites to regulation imposed by the Act, not on whether substantial evidence supported the Secretary's determinations.

247. *Id.* at 614-15, 639 (plurality opinion).

248. *Id.* at 639-40 (plurality opinion). 29 U.S.C. § 652(8) (1976).

249. 448 U.S. 607, 642 (1980) (plurality opinion).

250. *Id.*

when workplaces are not yet unsafe. The Secretary's threshold responsibility is to ensure that his standards are in fact addressing significant risks of harm.

Justice Stevens' reading of section 3(8) was not precisely the same as the interpretation adopted by the Fifth Circuit. The Fifth Circuit found in the "reasonably necessary or appropriate" clause itself a threshold requirement that the Secretary must meet prior to regulation.[251] Justice Stevens found his threshold requirement in the word "safe" used in section 3(8). Justice Stevens did not set aside the 1 ppm standard because the Secretary failed to weigh costs and benefits as may be required by the "reasonably necessary or appropriate" clause. He set it aside because the Secretary failed to find that a 10 ppm exposure limit for benzene meant that workplaces were not "safe," as defined under the Act.[252]

Justice Stevens read section 3(8) of the Act as if its language were similar to the language of sections 7(a) and 9(c) of the CPSA. Under those provisions, a showing of unreasonable risk is necessary to establish that a Commission regulation is "reasonably necessary to prevent or reduce an unreasonable risk of injury associated with [a consumer] product."[253] Justice Stevens determined that under section 3(8), a showing of significant risk is necessary to establish that an OSHA regulation is "reasonably necessary or appropriate to provide safe or healthful employment and places of employment."[254] If Justice Stevens' definition of "safe" is inserted into section 3(8), that section becomes an approximation of sections 7(a) and 9(c) of the CPSA. Section 3(8) would read: "reasonably necessary or appropriate to eliminate or reduce a significant risk of harm associated with employment and places of employment." So, because of his definition of "safe," Justice Stevens read section 3(8) as if Congress had expressly required that a certain level of risk exist before the Secretary can validly promulgate a regulation.

This discussion is not meant to suggest that Justice Stevens was implicitly calling for the Secretary to make a cost-benefit analysis similar to the one imposed upon the Commission. Justice Stevens determined that the Act requires the Secretary to find a significant risk prior to regulation, but indicated that the threshold finding would not require a cost-benefit analysis.

---

251. 581 F.2d 493, 502-03 (5th Cir. 1978). See text at notes 196-98 *supra*.
252. 448 U.S. 607, 653 (1980) (plurality opinion).
253. 15 U.S.C. § 2056(a)(1) (1976).
254. 29 U.S.C. § 652(8) (1976).

Justice Stevens refused to suggest what factual determinations would allow the Secretary to conclude that a significant risk of harm is present in the workplace.[255] However, Justice Stevens did supply two general guidelines, and they indicated that he was aware of the fact that OSHA is unable to completely ground its regulation of occupational carcinogens upon conclusive factual determinations. However, other language in his opinion points in the opposite direction, suggesting that the Court may require factual findings concerning the risk which are presently beyond OSHA's reach.

The first guideline invoked by Justice Stevens portrayed the threshold requirement as "not a mathematical straitjacket."[256] Justice Stevens indicated that the Secretary is not required to pinpoint exactly the probability of harm created by the substance which is to be regulated. Also, once the risk is adequately estimated, the Secretary must decide whether that risk is "significant." Justice Stevens understood that when the Secretary characterizes a particular risk as significant or insignificant, he must rely primarily on policy considerations.[257]

So, Justice Stevens would allow the Secretary to use policy judgments after the risk has been estimated. However, Justice Stevens suggested that when the risk is estimated, the required degree of factual certainty may be considerable. First, Justice Stevens emphasized the absence in the record supporting the benzene regulation of any finding that exposure to a 10 ppm level of benzene had even once caused leukemia.[258] He indicated that the Secretary would have to wait and gather more factual evidence showing a risk of leukemia at 10 ppm, rather than assume, because of benzene's carcinogenicity, that 10 ppm exposure creates some risk. Second, Justice Stevens determined that OSHA has the burden of proving, "on the basis of substantial evidence, that it is at least more likely than not" that prolonged exposure to benzene at a 10 ppm level presents a significant health risk.[259] This language suggests that a factual finding would be required, one which estimates with some precision the extent and likelihood of the risk created by 10 ppm exposure. Finally, Justice

255. 448 U.S. 607, 659 (1980) (plurality opinion).

256. *Id.* at 655 (plurality opinion).

257. *Id.* at 655-56 n.62 (plurality opinion).

258. *Id.* at 634 (plurality opinion). Justice Stevens also quoted with approval the Fifth Circuit, which wrote that OSHA was "unable to point to any empirical evidence documenting a leukemia risk at 10 ppm." 581 F.2d 493, 503 (5th Cir. 1978).

259. 448 U.S. 607, 653 (1980) (plurality opinion). Justice Stevens added that "OSHA did not even attempt to carry its burden of proof." *Id.*

Stevens implied that he would demand that the risk "be quantified sufficiently to enable the Secretary to characterize it as significant in an understandable way."[260] This requirement would have the greatest impact on the Secretary's regulatory discretion. Since the benzene record did not permit a quantification of risk, the Secretary would be precluded from regulating this carcinogen until much more extensive data becomes available.

On the other hand, there was also a suggestion in the plurality opinion that the Secretary may be able to satisfy the threshold requirement with the evidence available in the benzene record. Justice Stevens pointed to the "fair amount of epidemiological evidence" available, and suggested that even though it may not allow a "precise correlation between exposure levels and cancer risks, it would at least be helpful in determining whether it is more likely than not that there is a significant risk at 10 ppm."[261] Justice Stevens indicated that if the Secretary had used the record fully, he might have been able to estimate the leukemia risk at 10 ppm, and then convince the Court that the risk was significant. Presumably, Justice Stevens would not require more than a very rough quantification of the risk. In this form, the threshold requirement would not as severely handicap the Secretary as he sets standards for occupational carcinogens.

The second guideline Justice Stevens used to describe the threshold finding was also somewhat inconsistent with other language in his opinion. Justice Stevens would allow the Secretary to find a significant risk without achieving scientific certainty.[262] When interpreting data relating to carcinogens, the Secretary may adopt conservative assumptions which have reputable, although not unanimous, scientific support. Justice Stevens determined that this approach would be valid even though it creates a risk of overprotection, in that the Secretary might be led to promulgate regulations that are more stringent than is required to protect worker health.[263]

Justice Stevens' second guideline appears to encompass the Secretary's reasoning as he selected the 1 ppm standard for benzene. The Secretary used certain assumptions for which there was considerable scientific support. However, Justice Stevens set aside the 1 ppm standard precisely because it was based on these assumptions.[264]

---

260. *Id.* at 646 (plurality opinion).
261. *Id.* at 657 n.64 (plurality opinion).
262. *Id.* at 656 (plurality opinion).
263. *Id.* (plurality opinion).
264. *Id.* at 634, 659 (plurality opinion).

Justice Stevens did not allow the Secretary to assume that any exposure level to benzene above 0 ppm creates a leukemia risk sufficient to justify a reduction of the permissible exposure limit to 1 ppm. Presumably, therefore, Justice Stevens would require a quantification of the risk at 10 ppm, but would allow the Secretary to use conservative assumptions as he makes that quantification. If this is the case, the Secretary would still be obliged to do what he concluded could not be reliably done on the basis of the benzene record.[265]

Because of the conflicting language in Justice Stevens' opinion, the impact of the threshold requirement cannot be assessed with certainty. It would appear, however, that in order to satisfy the requirement, the Secretary will need more facts than were available in the record supporting the benzene regulation.

B. The Dissent's Reasoning

In his dissent, Justice Marshall concluded that the threshold requirement established by the plurality was a fabrication that was contrary to the congressional intent expressed in the Act.[266] Justice Marshall's disposition of the case recalled the approach used by the District of Columbia, the Second, and the Third Circuits.

Justice Marshall determined that judicial review under the substantial evidence standard prescribed by section 6(f) "is ultimately deferential."[267] He criticized the plurality for being insensitive to three factors which make the application of section 6(f) to an OSHA standard very difficult. First, such standards frequently present issues of great technical complexity, for which the courts are not well-prepared. Second, the standards often involve factual issues which are beyond definitive resolution. Finally, policy judgments are invariably a part of the Secretary's decision making. This complicates a court's review because policy judgments cannot be evaluated solely on the basis of the factual record. For these reasons, Justice Marshall concluded that judicial review must be limited in scope, ensuring only that the Secretary's decision making was reasonable and within the statutory boundaries imposed by Congress.[268]

---

265. Justice Marshall argued that a quantification of the risk at 10 ppm could only be made "on the basis of assumptions that must be considered too speculative to support any realistic assessment of the relevant risk." *Id.* at 716 (dissenting opinion). *See* McGarity, *supra* note 46, at 806.

266. 448 U.S. 607, 708 (1980) (dissenting opinion).

267. *Id.* at 705 (dissenting opinion).

268. *Id.* (dissenting opinion).

Applying this standard of review to the Secretary's benzene regulation, Justice Marshall found that the reduction to 1 ppm was authorized by section 6(b)(5).[269] He noted that the Secretary's findings were left intact by both the Fifth Circuit and the plurality, and determined that they adequately supported the Secretary's conclusion that the reduction would save an unknown but possibly substantial number of lives. Justice Marshall required no quantification of the expected benefits. He found no statutory language that would prevent the Secretary from regulating when he knows that a standard would improve protection of worker health, but does not know the extent of that improvement.[270]

C. Principal Questions of Statutory Construction

Justice Stevens and Justice Marshall had different answers for the two questions of statutory construction which arose in *Industrial Union Department, AFL-CIO v. American Petroleum Institute.* The first question was whether section 3(8) applies to section 6(b)(5), and the second concerned the proper interpretation of section 3(8).

1. Does Section 3(8) Apply to Section 6(b)(5)?

Justice Stevens' primary argument in support of his conclusion that section 3(8) applies to section 6(b)(5) was not convincing. He argued that section 3(8)'s definition of an occupational safety and health standard is incorporated by reference into section 6(b)(5). Accordingly, like any other permanent standard promulgated under the Act, section 6(b)(5) standards must address significant risks of harm.[271]

Justice Marshall's reasons for finding that section 3(8) does not apply to section 6(b)(5) were more cogent. Justice Marshall argued that section 3(8) may indeed impose some sort of requirement upon the Secretary, but it does not follow that this requirement overrides the requirements specifically set out in the first sentence of section 6(b)(5).[272] That sentence states that in the area of toxic material

---

269. *Id.* (dissenting opinion).

270. *Id.* at 707-08 (dissenting opinion).

271. *Id.* at 642 (plurality opinion).

272. *Id.* at 710 (dissenting opinion). Justice Marshall wrote that "the most elementary principles of statutory construction demonstrate that precisely the opposite interpretation is appropriate." *Id.* Justice Marshall meant that the specific requirements in § 6(b)(5) should override any requirement that § 3(8) may impose.

regulation, the Secretary has the 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" because of occupational exposure.[273] This unique duty arises only when the Secretary promulgates regulations of toxic materials. Thus, section 6(b)(5)'s requirements appear to be unaffected by other requirements which may exist in the Act.

By imposing section 3(8)'s threshold requirement upon the Secretary whenever he promulgates any permanent standard under the Act, the plurality undercut to some extent the force of section 6(b)(5)'s first sentence. The initial obligation the Secretary must fulfill under section 6(b)(5) is now the same as it is when he regulates a non-toxic substance.[274] This result cannot be comfortably reconciled with Congress' inclusion of a standard-setting provision that deals only with toxic materials.

Purely from the standpoint of the Act's structure, the dissent's position is more appropriate. The question whether the Secretary had the statutory authority to promulgate the 1 ppm standard for benzene should have been answered on the basis of the language in section 6(b)(5). The dispute over whether section 3(8) applies to section 6(b)(5) assumed greater significance in light of the plurality's interpretation of section 3(8).

2. What Does Section 3(8) Require?

Justice Stevens interpreted section 3(8) to require the Secretary to find, as a threshold matter, that a significant risk of harm exists in the workplace. This interpretation was based primarily on Justice Stevens' perception of the congressional intent behind the Act.[275]

---

273. 29 U.S.C. § 655(b)(5) (1976).

274. Because of this, Justice Marshall concluded that "the test for standards regulating toxic substances and harmful physical agents [is now] substantially identical to the test for standards generally—plainly the opposite of what Congress intended." 448 U.S. 607, 709 (1980) (dissenting opinion). Justice Stevens agreed that the threshold requirement is now the same for any permanent standard promulgated under the Act. He added that § 6(b)(5)'s first sentence compels the Secretary to adopt a "highly protective standard" once he has satisfied the threshold requirement. *Id.* at 643 n.48 (plurality opinion).

Justice Marshall's suggestion that the plurality's threshold requirement "renders utterly superfluous the first sentence of § 6(b)(5)" is exaggerated. *Id.* at 709 (dissenting opinion). As noted in the text, the threshold requirement does change the character of § 6(b)(5)'s first sentence. However, as Justice Stevens stated, that sentence is not altogether eliminated from the Act because it still compels the selection of highly protective standards after the threshold requirement is met.

275. *Id.* at 641 (plurality opinion). Congress' intent will be discussed in the following subsection.

In addition to disputing Justice Stevens' perception of Congress' intent,[276] Justice Marshall found no precedent to support Justice Stevens' interpretation of section 3(8). "Reasonably necessary or appropriate" clauses, like that in section 3(8), are included in regulatory statutes as a matter of routine. Justice Marshall noted that prior to the plurality's decision, the Supreme Court had held consistently that these clauses require a reasonable relationship between an agency's regulatory actions and the congressional purposes expressed in the statute's substantive provisions.[277] Under this view, section 3(8) does not establish a requirement that the Secretary must meet in addition to the requirements found in section 6(b)(5). Justice Marshall determined that section 3(8) would be satisfied whenever the Secretary reasonably concluded that a section 6(b)(5) standard would "most adequately assure[ ] . . . that no employee will suffer material impairment of health or functional capacity."[278] Justice Marshall concluded that the plurality's interpretation was inconsistent with this precedent, as the plurality found in a "reasonably necessary or appropriate" clause a substantive requirement that changes the duty Congress imposed upon the Secretary through a standard-setting provision (*i.e.*, section 6(b)(5)).[279]

As noted earlier,[280] Justice Stevens read section 3(8) as if its language were like that in sections 7(a) and 9(c) of the CPSA. Justice Stevens suggested that Congress required that an unreasonable risk exist before the Commission can regulate, and that a significant risk exist before OSHA can regulate. This was inappropriate, because the CPSA expressly provides for the regulation of unreasonable risks, but the Act does not expressly provide for the regulation of significant risks. Congress could have included in the Act a provision requiring regulation of only significant risks. The plurality's argument that this requirement was built into the Act by the word "safe" in section 3(8) assumes that Congress decided to obscure the threshold requirement rather than make it explicit. Because this assumption is illogical, the plurality's argument is not persuasive.

---

276. Justice Marshall's perception of Congress' intent will be discussed in the following subsection.

277. 448 U.S. 607, 708 (1980) (dissenting opinion). As examples of this construction of "reasonably necessary or appropriate" clauses, Justice Marshall cited FCC v. National Citizens Committee for Broadcasting, 436 U.S. 775 (1978); Mourning v. Family Publications Service, Inc., 411 U.S. 356 (1973); and Thorpe v. Housing Authority of the City of Durham, 393 U.S. 268 (1969).

278. 29 U.S.C. § 655(b)(5) (1976).

279. 448 U.S. 607, 709 (1980) (dissenting opinion).

280. See text at notes 253-54 *supra*.

D. Did Congress Intend that the Secretary Regulate only Significant Risks of Harm?

The plurality imposed the threshold requirement of significant risk upon the Secretary because of its perception of the congressional intent reflected in the Act and its legislative history. The dissent examined the same evidence, and found no support for the plurality's conclusion that Congress intended to make a showing of significant risk a prerequisite to regulation.

1. Section 6(b)(5)'s Language

Justice Stevens noted that section 6(b)(5) authorizes the Secretary to promulgate standards only for *toxic* chemicals and *harmful* physical agents, not for all chemicals and physical agents.[281] Those adjectives limit the Secretary's authority since he is first obliged to find that the chemical under consideration is toxic. Justice Stevens reasoned that since Congress required the Secretary to regulate only toxic chemicals under section 6(b)(5), it was not inconsistent to find that Congress required the Secretary to regulate only significant risks under section 3(8).[282]

Probably to better effect, Justice Stevens cited other language in section 6(b)(5) which he concluded reflects Congress' decision that the Secretary should not attempt to completely eliminate all risks from all workplaces. Justice Stevens noted that section 6(b)(5)'s first sentence[283] circumscribes the Secretary's standard-setting authority. If a risk cannot be feasibly eliminated or does not create a threat of material health impairment, the Secretary would exceed his section 6(b)(5) authority if he promulgated a regulation designed to eliminate it. Section 6(b)(5)'s first sentence also requires the Secretary to regulate "on the basis of the best available evidence," which is to consist of "research, demonstrations, experiments, and other such information as may be appropriate."[284] These clauses indicated

---

281. *Id.* at 642-43 (plurality opinion). 29 U.S.C. § 655(b)(5) (1976).

282. 448 U.S. 607, 642-43 (1980) (plurality opinion).

283. The first sentence of section 6(b)(5) reads:

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

29 U.S.C. § 655(b)(5) (1976).

284. *Id.*

to Justice Stevens that Congress wanted the Secretary to base his regulatory decisions to the greatest extent possible on factual determinations.[285] Finally, section 6(b)(5) directs the Secretary to be aware of certain considerations as he sets standards. While "the attainment of the highest degree of health and safety protection for the employee" is one consideration, others must be "the latest available scientific data in the field, the feasibility of the standards, and experience gained under this and other health and safety laws."[286] Justice Stevens found in this language a congressional instruction to the Secretary to consider the significance of the risk before regulating under section 6(b)(5), in keeping with the Act's pragmatic goal of eliminating or reducing significant risks of harm present in the workplace.[287]

Justice Marshall, on the other hand, emphasized the strength of the congressional mandate expressed in section 6(b)(5)'s first sentence. Justice Marshall noted that the Secretary is authorized to protect workers from substances that would cause material impairment of health only upon long-term exposure.[288] Also, the "best available evidence" clause contemplates OSHA regulations based on inconclusive factual records. Justice Marshall reasoned that since scientific uncertainty and disagreement are to be expected, Congress intended to allow the Secretary to regulate without the benefit of definitive data.[289] Finally, Justice Marshall indicated that much of the language in section 6(b)(5)'s first sentence invests the Secretary with particularly strong authority to regulate toxic materials. That authority, Justice Marshall concluded, would be unjustifiably reduced if the Secretary were required to make a factual finding of significant risk before he could regulate.[290]

The language of section 6(b)(5) demands a high degree of protection for workers. But it also requires that the Secretary rely on as much data as possible while setting standards, and consider the costs that standards would impose upon industry. As a result, section 6(b)(5) is ambiguous with respect to whether Congress intended that

---

285. 448 U.S. 607, 643 n.48 (1980) (plurality opinion).

286. 29 U.S.C. § 655(b)(5) (1976).

287. 448 U.S. 607, 643 n.48 (1980) (plurality opinion).

288. *Id.* at 693 (dissenting opinion).

289. *Id.* Justice Marshall also quoted the Report of the House Committee on Education and Labor, which stated: "it is not intended that the Secretary be paralyzed by debate surrounding diverse medical opinions." H.R. REP. NO. 1291, 91st Cong., 2d Sess. 18 (1970).

290. 448 U.S. 607, 693 (1980) (dissenting opinion).

291. S. 2193, 91st Cong., 2d Sess. (1970).

292. *Id.* at 40.

the Secretary make a threshold finding of significant risk prior to regulation. To determine Congress' intent, the Act's legislative history must be considered.

2. The Act's Legislative History

The legislative history of the Occupational Safety and Health Act indicates that Justice Stevens' interpretation of section 3(8) was mistaken. The Senate Committee on Labor and Public Welfare reported a bill, S.2193,[291] which contained the original version of section 6(b)(5). That version was not limited to toxic materials and harmful physical agents, and stated that the Secretary is to select the standard which most adequately assures that no employee will suffer "any" impairment of health or functional capacity.[292] On the Senate floor, Senator Peter H. Dominick[293] strongly criticized this provision, claiming that it would require the Secretary to eliminate all hazards from all workplaces. Citing the examples of workers in Florida exposed to mosquitoes[294] and of a streetcar or bus conductor exposed to pollution and traffic accidents, Senator Dominick argued that some risks associated with employment could not be eliminated unless the Secretary forbade workers from performing those jobs. The Secretary would be faced with an impossible choice, having to either forbid certain types of employment or ignore Congress' command as expressed in the provision.[295] Consequently, Senator Dominick advocated deletion of section 6(b)(5) and introduced an amendment to that effect.[296]

On the basis of Senator Dominick's criticisms of section 6(b)(5)'s original draft, Justice Marshall argued that Congress did not intend to invest section 3(8) with the meaning the plurality gave it. Justice Marshall noted that when Senator Dominick expressed his concern that section 6(b)(5) would require the maintenance of risk-free workplaces, section 3(8) was already a part of S.2193. As the ramifications of section 6(b)(5) were debated, neither Senator Dominick nor any other Senator invoked section 3(8). Justice Marshall reasoned that if Congress had intended section 3(8) to modify section 6(b)(5), Senator Dominick's criticisms of the latter would have been unfounded.[297] Since section 3(8) would force the Secretary to refrain

293. (R.-Colo.)
294. 448 U.S. 607, 647 (1980) (plurality opinion).
295. 116 CONG. REC. 37,614 (1970).
296. *Id.*
297. 448 U.S. 607, 710-11 (1980) (dissenting opinion).

from regulating insignificant risks, Congress would have had no reason to consider whether this draft of section 6(b)(5) required absolute safety.[298]

Justice Stevens' rebuttal to this argument was unsatisfactory. He conceded that section 3(8), as he construed it, should have made Senator Dominick's criticisms unnecessary. Justice Stevens explained the criticisms by claiming that because Senator Dominick was an opponent of the legislation, he "may have exaggerated the significance of the problem" created by section 6(b)(5)'s original draft.[299] If Congress meant to take the unusual step of investing the "reasonably necessary or appropriate" provision with substantive content, this probably would have become apparent during its consideration of the Act. The debate over section 6(b)(5)'s implications provided Congress with a good opportunity to delineate section 3(8)'s impact. Because this debate occurred, and because section 3(8) was not mentioned during it, Congress probably did not intend section 3(8) as the plurality read it.

The legislative history also suggests that section 6(b)(5) was not intended to require the Secretary to promulgate regulations designed to eliminate all risks from all workplaces. After initially proposing that section 6(b)(5) be eliminated from the Act, Senator Dominick revised his amendment after discussing it with the sponsors of S.2193. The revised amendment, which was later adopted, altered section 6(b)(5)'s scope, limiting it to toxic materials and harmful physical agents, and changed the adjective preceding "impairment" from "any" to "material." Explaining the purpose of his amendment, Senator Dominick indicated that for certain substances, short-term exposure may not lead to toxic effects. However, long-term exposure to those same substances could be very dangerous. Senator Dominick stated that these long-term effects must be considered when section 6(b)(5) standards are set.[300] Senator Williams, a spon-

298. *Id.* (dissenting opinion).

299. *Id.* at 647-48 n.52 (plurality opinion).

300. Senator Dominick stated:

> It is my understanding, if I may say so, that what we are doing now is to say that the Secretary has got to use his best efforts to promulgate the best available standards, and in so doing, that he should take into account that anyone working in toxic agents or physical agents which might be harmful may be subjected to such conditions for the rest of his working life, so that we can get at something which might not be toxic now, if he works in it a short time, but if he works in it the rest of his life it might be very dangerous; and we want to make sure that such things are taken into consideration in establishing standards; is that correct?

116 CONG. REC. 37,623 (1970). Senator Dominick's question was addressed to Senator Williams, who agreed with the explanation. *Id.*

sor of S.2193, agreed with Senator Dominick's interpretation of section 6(b)(5), as amended.[301]

On the basis of the Dominick amendment, Justice Stevens argued that after Congress recognized that absolute safety cannot be achieved, it settled on the elimination of significant health risks as an appropriate goal. Justice Stevens reasoned that because Congress substituted the word "material" for "any" in section 6(b)(5), it intended that the Secretary should not promulgate standards simply because he determines that some risk of serious harm exists.[302] He is first obliged to consider the significance of that risk. Justice Stevens concluded that Congress did not intend for the Secretary to require employers to spend hundreds of millions of dollars to reduce or eliminate a risk of serious harm that may be insignificant.[303]

Justice Marshall argued that if section 3(8) did not require the regulation of only significant risks before the Dominick amendment, it could not have acquired that meaning when the amendment was adopted. Justice Marshall noted that because Congress made statutory modifications in the text of section 6(b)(5), section 3(8)'s meaning was not affected.[304] While the Dominick amendment may support Justice Stevens' perception of Congress' intent, it does not directly support his interpretation of section 3(8).

Justice Marshall advanced his own interpretation of the Dominick amendment. He distinguished between material impairment and material risk of impairment, suggesting that "material" in section 6(b)(5) refers to the level of harm, not risk. Justice Marshall argued that Congress could have amended section 6(b)(5) to read "material risk of impairment" (which would have supported the plurality's interpretation), but chose not to.[305] Justice Marshall concluded that the substitution of "material" for "any" was made in order to prevent the Secretary from regulating substances that present a threat of only insignificant harm.[306]

Justice Marshall also suggested that the Dominick amendment reflects a congressional decision to provide special protection for workers exposed to toxic materials or harmful physical agents. He determined that the sponsors of S.2193 convinced Senator Dominick

---

301. *Id.*

302. 448 U.S. 607, 646-47, 650 (1980) (plurality opinion).

303. *Id.* at 651-52 (plurality opinion).

304. *Id.* at 711 (dissenting opinion).

305. *Id.* at 720-21 n.34 (dissenting opinion).

306. *Id.* at 693 (dissenting opinion). *See* Brief for Federal Parties at 59, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980).

that the especially strong mandate of section 6(b)(5)—which Senator Dominick originally wanted to remove from the Act—is appropriate when toxic materials and harmful physical agents are regulated. Justice Marshall concluded that Senator Dominick and the sponsors of S.2193 reached a legislative compromise, which retained section 6(b)(5) but restricted its scope.[307]

While Justice Marshall's conclusion is plausible, it is largely undercut by another statement made by Senator Dominick. While describing the intent of his amendment, Senator Dominick stated:

> What we were trying to do in the bill—unfortunately, we did not have the proper wording or the proper drafting—was to say that when we are dealing with toxic agents or physical agents, we ought to take such steps as are feasible and practical to provide an atmosphere within which a person's health or safety would not be affected.[308]

In rebutting Justice Marshall's interpretation of the Dominick amendment, Justice Stevens concluded from this statement that the amendment does not reflect a congressional determination that special protection of workers is needed when toxic materials are present in the workplace. Instead, the amendment simply provided the words ("toxic materials or harmful physical agents") which the Committee had inadvertently left out of S.2193. Justice Stevens determined that the section, as amended, reflects Congress' awareness of the special problems OSHA faces when it regulates health, rather than safety, risks.[309]

While the legislative history does not reveal whether Congress intended to require the Secretary to make a threshold finding of significant risk, it does justify two conclusions. First, the legislative history does not support Justice Stevens' interpretation of section 3(8). The absence of any mention of that section—especially when contrasted to the considerable legislative attention given to section 6(b)(5)—indicates that Congress did not intend to impose additional requirements upon the Secretary through section 3(8). Second, Justice Stevens' belief that Congress intended the Act "to require the elimination, as far as feasible, of significant risks of harm"[310] is

---

307. *Id.* at 448 U.S. 607, 711-12 n.28 (dissenting opinion).

308. 116 CONG. REC. 37,622 (1970).

309. 448 U.S. 607, 649 n.54 (1980) (plurality opinion). Justice Stevens noted that Congress, in the person of Senator Dominick, outlined the special problems which accompany regulation of health risks. See text and note at note 299 *supra*. Justice Stevens indicated that safety risks are "generally immediate and obvious" but health risks may not become apparent until long-term exposure has occurred. 448 U.S. 607, 649 n.54 (1980) (plurality opinion).

310. *Id.* at 641 (plurality opinion).

not without support in the legislative history. Senator Dominick's criticisms of section 6(b)(5) as originally written, and his "material" amendment, reflect a congressional attitude in favor of requiring the Secretary to consider the significance of risks before proceeding with regulations. These conclusions suggest that Justice Steven's interpretation (*i.e.*, that the Act requires a threshold finding of significant risk) would have been more plausible had it been based on section 6(b)(5), rather than on section 3(8).

3. Policy Considerations

Both Justice Stevens and Justice Marshall cited policy reasons in support of their respective conclusions about whether the Secretary must make a threshold finding of significant risk prior to regulation.

Justice Stevens was justifiably concerned with the likely consequences that would follow a decision to uphold the Secretary's benzene regulation. He determined that the Secretary's interpretation of sections 3(8) and 6(b)(5), along with OSHA's generic approach to the regulation of carcinogens, would provide the Secretary with "unprecedented power over American industry."[311] Once a substance was identified as a probable carcinogen, the Secretary could find that any exposure above 0 ppm creates a risk of cancer. Justice Stevens reasoned that on the basis of this "no safe level" finding, the Secretary could promulgate sweeping regulations, limited only by the requirement that they be technologically and economically feasible. Considering the great number of workplace substances that are believed or suspected to be carcinogenic, Justice Stevens concluded that the Secretary could require employers to spend huge sums of money for health benefits that may prove to be insignificant.[312]

Similarly, the industry challengers of the benzene regulation argued that if the Secretary regulates without first sufficiently identifying the risks, he will inevitably frustrate the Act's primary purpose, which is to make working conditions safe and healthful "so far as possible."[313] Employers have limited resources available for health and safety purposes. Industry challengers asserted that these resources can be used in a way that does the most to ensure that

311. *Id.* at 645 (plurality opinion). Justice Stevens indicated that "if the Government were correct in arguing that neither § 3(8) nor § 6(b)(5) requires that the risk from a toxic substance be quantified sufficiently to enable the Secretary to characterize it as significant in an understandable way," the Act might be unconstitutional. So interpreted, the Act might be a too "sweeping delegation of legislative power." Schechter Poultry Corp. v. United States, 295 U.S. 495, 539 (1935).

312. 448 U.S. 607, 645 (1980) (plurality opinion).

313. 29 U.S.C. § 651(b) (1976).

American workplaces are safe and healthful only if the Secretary is required to show that his regulations are addressing significant risks of harm.[314]

Justice Marshall, on the other hand, invoked a compelling policy reason for not requiring the Secretary to quantify the risk created by a toxic substance. Requiring quantification would force the Secretary to postpone regulation of those substances which present a cancer risk that cannot now be estimated. Justice Marshall noted that this "regulatory inaction" would result in the continued exposure of workers to a risk of cancer and other serious diseases.[315] Justice Marshall argued that because the risks presented by some of these carcinogens may prove to be significant, employees would have to pay the health costs which arise as science gathers more data. This result would be at odds with the letter and spirit of the Act, since it was intended to protect workers from the dangers created by workplace conditions.[316]

E. Justice Powell's Opinion

In order to assess the potential impact of *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, it is necessary to examine where Justice Powell stood in relation to the dispute between the plurality and the dissent. Justice Rehnquist filed a separate opinion concurring in the plurality's judgment, but based his opinion on different grounds.[317]

Justice Powell adopted the plurality's interpretation of the statutory provisions relevant to this case. He concluded that sections 3(8) and 6(b)(5) are to be read together, and that the Secretary must make a threshold finding of significant risk in order to show that a regulation is reasonably necessary or appropriate to provide safe workplaces.[318]

Justice Powell also agreed with the plurality that the benzene regulation must be set aside if it were based on the assumption that occupational exposure to a carcinogen must always be reduced to either a safe level, if one is found, or the lowest feasible level.[319] Like

---

314. Brief for Respondents at 37, 73, Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980).

315. 448 U.S. 607, 714 (1980) (dissenting opinion).

316. *Id.* at 690.

317. See note 242 *supra.*

318. 448 U.S. 607, 664-65 (1980) (Powell, J., concurring in part and in the judgment).

319. *Id.* at 665 (Powell, J., concurring in part and in the judgment).

the plurality, Justice Powell would not permit the Secretary to use the policy judgment which is the cornerstone of OSHA's generic approach to the regulation of carcinogens.

However, Justice Powell disagreed with the plurality's ruling that the Secretary made no effort to prove that exposure to benzene at a 10 ppm level created a significant health risk. Justice Powell determined that if substantial evidence supported the Secretary's finding that the risk at 10 ppm (although unquantifiable) was serious enough to warrant the costs of the 1 ppm standard, the threshold requirement would be met.[320] Justice Powell concluded that OSHA failed to establish that a significant risk existed at 10 ppm.[321] He added that even if OSHA had established this risk, this would not have been enough to sustain the benzene regulation. Like the Fifth Circuit, Justice Powell read the Act to require a reasonable relationship between the costs and expected benefits of an OSHA standard.[322]

Like the dissenters, Justice Powell did not find that quantification of the risk is a prerequisite to regulation.[323] He outlined a two-step reviewing process. First, the court must consider whether substantial evidence supported the Secretary's finding that quantification of the risk was impossible. Second, if that finding was supported by substantial evidence, the court must then determine whether substantial evidence supported the Secretary's finding of significant risk. If quantification was impossible, Justice Powell would allow the Secretary to find a significant risk by relying on the weight of expert testimony and opinion.[324]

VII. Possible Effect of the Supreme Court's Decision upon OSHA Regulations of Occupational Carcinogens

Because of Justice Powell's conclusions, the Supreme Court assumed the following configuration in *Industrial Union Department, AFL-CIO v. American Petroleum Institute*. First, a majority of the Court (the four dissenters and Justice Powell) found that the Secretary is not automatically precluded from regulating when he is unable to quantify the risk created by exposure to a toxic substance at the present limit. Whether the plurality would require quantification in every case is uncertain. Second, four Justices (the plurality

320. *Id.* at 666 (Powell, J., concurring in part and in the judgment).
321. *Id.* at 667 (Powell, J., concurring in part and in the judgment).
322. *Id.* (Powell, J., concurring in part and in the judgment).
323. *Id.* at 666-67 (Powell, J., concurring in part and in the judgment).
324. *Id.* (Powell, J., concurring in part and in the judgment).

and Justice Powell) concluded that the Act requires the Secretary to find, prior to regulation, that exposure at the current permissible limit presents a significant risk of material health impairment.

Because the Court split, four to four, on the question whether the Secretary must make a threshold finding of significant risk, one can only speculate about the effect that this decision will have on OSHA regulation of occupational carcinogens. However, one conclusion is clear. If the Secretary is indeed required to make this threshold finding, either by quantification or on the weight of expert opinion, the generic approach to regulating carcinogens has been undercut.

That approach is based on a policy judgment which the Secretary would no longer be able to use if he must make a threshold finding of significant risk. Presently, the Secretary assumes that if a safe exposure level is not established for a workplace carcinogen, any exposure level above 0 ppm is unsafe because it creates some risk of cancer.

If the threshold requirement must be met, the Secretary will no longer be able to assume that exposure at the current permissible limit creates a risk of cancer which renders workplaces unsafe and requires a reduction of the limit to the lowest feasible level. Instead, the Secretary will be obliged to find, on the basis of substantial evidence, that the risk associated with the current limit is significant.

If quantification is required to make the threshold finding, OSHA regulation of occupational carcinogens will be severely weakened. Requiring a reliable quantification would result in the indefinite postponement of OSHA regulations for those occupational substances which create a risk of cancer at low exposure levels that cannot now be estimated.

If courts permit the Secretary to base a finding of significant risk on expert testimony and opinion, the effect on OSHA's ability to regulate occupational carcinogens would not be as severe. Unanimity of scientific opinion would probably not be required.[325] As long as a substantial number of scientific experts supports the Secretary's

---

325. This approach to weighing expert testimony and opinion was adopted by the Fifth Circuit. The court wrote:

> The divided opinion in the scientific community over the existence or not of safe threshold levels of exposure to carcinogens provides substantial evidence which would support the finding that exposure to benzene at the present level of 10 ppm poses some leukemia risk.

American Petroleum Institute v. Occupational Safety and Health Administration, 581 F.2d 493, 503 (5th Cir. 1978). Thus, the court did not demand scientific unanimity when it upheld the Secretary's finding that exposure to benzene at a 10 ppm level creates some risk of leukemia.

finding of significant risk, courts would allow the Secretary to regulate, even though quantification may be impossible.

However, even if courts allow expert testimony and opinion to support a finding of significant risk, the usefulness of OSHA's generic approach will still be greatly reduced. The Secretary's policy judgment that any exposure level to benzene above 0 ppm creates some risk of leukemia was supported by scientific opinion. However, that opinion did not establish that a 10 ppm exposure creates a significant risk. More expert testimony and opinion would be required, and that evidence must relate specifically to the current permissible exposure limit.

The holding of the Fifth Circuit Court of Appeals provides an apt summation of what it would mean to the Secretary to have to make a threshold finding of significant risk. The Fifth Circuit ruled that "Congress intended for OSHA to regulate on the basis of more knowledge and fewer assumptions than this record [supporting the benzene regulation] reflects."[326] By requiring the threshold finding, four Justices of the Supreme Court agreed. Instead of using a policy judgment which assumes that some risk exists, the Secretary will be forced to make a factual determination that the risk is significant in order to validly promulgate a regulation.

VIII. CONCLUSION

In the Occupational Safety and Health Act of 1970, Congress gave the Secretary of Labor the authority to set occupational standards, and provided that the Secretary's exercise of this authority is to be directed toward assuring, so far as possible, that workplaces in America will be safe and healthful. This statutory obligation becomes especially difficult to meet when carcinogens are present in a workplace. In order to reduce the regulatory problems created by occupational carcinogens, the Secretary adopted a generic approach, which allows him to reduce the permissible exposure limit for a carcinogen without having to estimate the risks present at low exposure levels.

The courts have struggled to identify how the Secretary can validly promulgate a standard when the available evidence is incomplete and inconclusive. The circuit courts which have addressed this issue have reached inconsistent conclusions. The District of Columbia, the Second, and the Third Circuits did not require that the Secretary

326. *Id.* at 505.

estimate the benefits expected from a standard. The Fifth Circuit, however, concluded that the Secretary is not authorized to regulate until he can make a rough but educated estimate of the expected benefits.

In *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, the Supreme Court affirmed the Fifth Circuit decision setting aside the Secretary's regulation which reduced the permissible exposure limit for benzene from 10 ppm to 1 ppm. In deciding this case, the Court was concerned with two provisions of the Act. Those provisions were section 3(8), which defines an occupational safety and health standard, and section 6(b)(5), which describes the duty imposed upon the Secretary when he regulates toxic materials or harmful physical agents.

Four Justices concluded that section 3(8) applies to section 6(b)(5), and requires that the Secretary find, as a threshold matter, that exposure to a toxic substance at the current permissible exposure limit creates a significant risk of material health impairment. Those Justices ruled that in promulgating the 1 ppm standard for benzene, the Secretary acted without statutory authority because he did not find that exposure at the 10 ppm level presents a significant risk of leukemia.

Four Justices vigorously dissented, disputing both the plurality's application of section 3(8) to section 6(b)(5) and its interpretation of section 3(8). They concluded that the Secretary's inability to quantify either the risk at 10 ppm or the expected benefits of the 1 ppm standard should not prevent the benzene regulation from taking effect. The dissenters determined that the regulation was within the Secretary's section 6(b)(5) authority since he found that it would achieve some health benefits.

If this decision causes other courts to require a threshold finding of significant risk, the Secretary's ability to regulate occupational carcinogens will be weakened. While the Supreme Court did not directly consider the validity of the generic approach in the case, its decision may greatly reduce the approach's usefulness to the Secretary.

The Supreme Court decision in *Industrial Union Department, AFL-CIO v. American Petroleum Institute* creates even more questions about how OSHA can validly regulate an occupational carcinogen when the available scientific and medical evidence is inconclusive. The decision jeopardizes the future effectiveness of OSHA's generic approach. Also, while four Justices required a threshold finding of significant risk, they did not adequately instruct the Secretary on how to make that finding. Finally, the court refused to consider

whether the Act also requires that the expected benefits of a regulation bear a reasonable relationship to its costs. So, the courts have yet to delineate the requirements which the Secretary of Labor must satisfy in order to validly promulgate a regulation for an occupational carcinogen on the basis of incomplete and inconclusive evidence.