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# OSHA's regulation of formaldehyde :

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# OSHA'S REGULATION OF FORMALDEHYDE:

# THE POLITICS OF SCIENTIFIC UNCERTAINTY

by

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## ABSTRACT

This thesis examines the influence of political factors upon the determination of regulatory policy under conditions of scientific uncertainty. The regulation of occupational exposure to toxic substances by the Occupational Safety and Health Administration (OSHA) provides an example of this type of policy. A discussion of the history of occupational health policy and the regulatory framework for occupational exposure to toxic substances serves as the basis for a review of OSHA's regulation of formaldehyde.

The thesis concludes that regulatory policy dealing with scientific uncertainty should take subjective, political factors into account. However, certain elements of the policy process can take these factors into account more legitimately than others. An examination of the roles of Congress, the judiciary, and the bureaucracy in the regulation of occupational exposure to toxic substances demonstrates that the bureaucracy remains the appropriate arena in which to resolve the problem of scientific uncertainty. Nevertheless, the thesis proposes several recommendations to improve OSHA's regulation of toxic substances.

# INTRODUCTION

> For we must admit that the workers in certain arts and crafts sometimes derive from them grave injuries, so that where they hoped for a subsistence that would prolong their lives and feed their families, they are too often repaid with the most dangerous diseases and finally, uttering curses on the profession to which they had devoted themselves, they desert their post among the living.[1]
>
> Bernardino Ramazzini

## Early History of Occupational Safety and Health

If a researcher surveyed Americans about their knowledge of safety and health in the workplace, many of their responses would include some reference to the Occupational Safety and Health Administration (OSHA). Advances in medicine and technology, as well as the controversy which has surrounded OSHA since its inception, have ensured that occupational safety and health issues have consistently received more attention during the era of OSHA than any other period of history. However, authors writing from perspectives as diverse as medicine and literature have identified

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[1] Bernardino Ramazzini, *De Morbis Artificum Diatriba*, 1713 ed., trans. Wilmer Cave Wright (Chicago: University of Chicago Press, 1940), p. 7.

occupational safety and health concerns throughout the development of Western civilization.[2] Furthermore, the issues which have been important historically often parallel many contemporary occupational safety and health matters. Thus, a discussion of occupational safety and health throughout Western development provides a foundation upon which the reader can build his knowledge of the American experience.

For example, the letters of Pliny the Younger, the Roman author and statesman, demonstrate the relevance of early Western ideas concerning occupational safety and health to contemporary issues. His reference to occupational lead poisoning is frequently cited in discussions of early industrial hygiene.[3] In modern occupational health, exposure to lead has consistently been a controversial topic.

Written during the Protestant Reformation, *De Re Metallica*, a comprehensive study of mining by the German scholar Georgius Agricola, includes some discussion of the occupational safety and health concerns of miners. While this work examines all aspects of mining, Agricola had a special interest in safety and health issues because he was a

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[2] In "A Law Is Made--The Legislative Process in the Occupational Safety and Health Act of 1970," *Labor Law Journal* 25 (1974), Benjamin L. Brown states that there is a long history of interest in occupational safety and health problems (p. 596). His brief historical account served as the impetus for this introduction.

[3] Ludwig Teleky, *History of Factory and Mine Hygiene* (New York: Columbia University Press, 1948), p. 4.

physician.[4] For instance, Agricola devotes much attention to the importance of mine ventilation.[5]

Many of the maladies which Agricola cites correspond to the contemporary occupational safety and health concerns of miners. One passage dealing with the effects of dust on breathing reminds the modern reader of coal miners' pneumoconiosis, commonly known as black lung disease:

> ...the dust which is stirred and beaten up by digging penetrates into the windpipe and lungs, and produces difficulty in breathing...If the dust has corrosive qualities, it eats away the lungs, and implants consumption in the body; hence in the mines of the Carpathian Mountains women are found who have married seven husbands, all of whom this terrible consumption has carried off to a premature death.[6]

Most important, one of Agricola's insightful statements summarizes the central theme of the contemporary occupational safety and health debate:

> ...we should always devote more care to maintaining our health, that we may freely perform our bodily functions, than to making profits.[7]

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[4] Bern Dibner, *Agricola on Metals* (Norwalk, Conn.: Burndy Library, 1958), p. 66.

[5] Ibid.

[6] Georgius Agricola, *De Re Metallica*, trans. Herbert Clark Hoover and Lou Henry Hoover (New York: Dover Publications, 1950), p. 214.

[7] Ibid.

## The Father of Modern Industrial Medicine

While Agricola is certainly important, one must remember that the theme of his work is the study of mining in general, rather than occupational safety and health. The first major treatise dealing specifically with occupational disease, *De Morbis Artificum Diatriba*, was published in the early eighteenth century by Bernardino Ramazzini, a professor at the University of Padua. He classifies the causes of occupational disease into two categories:

> The first and most potent is the harmful character of the materials that they handle, for these emit noxious vapors and very fine particles inimical to human beings and induce particular diseases; the second cause I ascribe to certain violent and irregular motions and unnatural postures of the body, by reason of which the natural structure of the vital machine is so impaired that serious diseases gradually develop therefrom.[8]

Although two causes of occupational disease are mentioned, Ramazzini emphasizes exposure to toxic substances as the more dangerous of the two throughout the work. For example, in the following passage, Ramazzini states that his treatise on occupational disease is a "novelty" specifically because it analyzes the health effects of exposure to toxic substances, or "effluvia":

> But just as with the products of the mechanical arts it nearly always happens that any new invention by some craftsman is imperfect and immature but is

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[8] Ramazzini, p. 15.

perfected later by the industry of others, so with literary work the same thing is bound to happen. I am aware that such will be the fate of my own treatise...on the diseases of workers...for one thing because its subject is something of a novelty. So far as I know, no one has set foot in this wide field, though from it one may gather a very valuable crop of observations on the subtility of effluvia and their powerful effects.[9]

Also, in more than half the chapters, Ramazzini explains that the chief risk to workers is the particles emitted from the materials which they must handle.[10] Therefore, Ramazzini's work is clearly relevant to a contemporary discussion of occupational exposure to toxic substances.

Moreover, Ramazzini is a significant figure in the development of occupational medicine in general because he was the first expert to encourage attending physicians to account for a patient's occupation in the diagnosis and treatment of illness. After reviewing the traditional list of questions which a physician should ask a patient, Ramazzini asserts:

> I may venture to add one more question: What occupation does he follow? Though this question may be concerned with the exciting causes, yet I regard it as well timed or rather indispensable, and it should be particularly kept in mind when the patient to be treated belongs to the common people. In medical practice, however, I find that attention is hardly ever paid to this matter, or if the doctor in attendance knows it without

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[9] Ibid., pp. 7, 9.

[10] Wilmer Cave Wright, "Introduction," in Ramazzini, pp. xxvi-xxvii.

> asking, he gives little heed to it, though for effective treatment evidence of this sort has the utmost weight.[11]

Accordingly, he regarded his treatise as a practical guide to be used by physicians in their diagnosis and treatment, rather than a purely scholastic endeavor. Thus, Ramazzini published both the original version in 1700 and the 1713 revision in pocket size to encourage frequent use by physicians on their rounds.[12]

One might compare Ramazzini's comments concerning the awareness of physicians to the testimony of George Meany, president of the American Federation of Labor and Congress of Industrial Organizations (AFL-CIO), in the late 1960s. Meany's remarks demonstrate the relevance of Ramazzini's insight to contemporary problems:

> ...our statistics fail to show the thousands of workers who die from causes related to their jobs but whose deaths are not recorded as directly or indirectly caused by the *doctors certifying the death certificates are unaware of the relationship of the job to the disease* [sic].[13]

Finally, Ramazzini's work is notable for its sympathetic attitude toward the working class, which the quotation at the

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[11] Ramazzini, p. 13.

[12] Wright, "Introduction," pp. xxvii-xxviii.

[13] Statement of George Meany, President, American Federation of Labor and Congress of Industrial Organizations, in U.S. Congress, House of Representatives, *Hearings before the Select Subcommittee on Labor of the Committee on Education and Labor*, 90th Cong., 2nd sess., February 1-March 14, 1968, p. 705. Emphasis added by this author.

beginning of this chapter manifests.[14] He wrote the treatise clearly on behalf of the working class:

> Wherefore do you, kind reader, give a friendly reception to my treatise which, though no great work of art, was written for the good of the community, or at all events for the benefit and comfort of the working classes, and, if you please: Make allowance for a work written not from ambition but from a sense of duty and to be of use.[15]

In sum, Ramazzini was successful in raising the question of how occupational factors contribute to illness. Indeed, he is known as the father of modern industrial medicine.[16] Unfortunately, scientists and policy makers have been unable to realize Ramazzini's hope that his work would be "perfected" later. The debate concerning the extent to which occupational factors cause disease continues.

## The Industrial Revolution

While Ramazzini promoted the topic of occupational health throughout the medical community, the advent of the Industrial Revolution increased the awareness of a larger audience. This awareness was part of a broader concern with the general deterioration of working conditions caused by the Industrial Revolution. Accordingly, working conditions first became an issue in England, where the Industrial Revolution progressed

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[14] Brown, "A Law Is Made," p. 596.

[15] Ramazzini, p. 13.

[16] Brown, "A Law Is Made," p. 596.

most quickly.

As previously noted, writers from various disciplines may demonstrate an interest in working conditions. For example, one nineteenth century critic of English working conditions from the field of literature was the author Charles Dickens.[17] Of course, Karl Marx is more closely associated with nineteenth century English working conditions. "The Working Day," a chapter in volume one of *Capital*, includes a discussion of the physical deterioration which laborers suffer when the capitalist extends the hours of work. To support his thesis, Marx cites various governmental studies, including one which deals with physical deterioration among potters:

> [Both male and female potters] are, as a rule, stunted in growth, ill-shaped, and frequently ill-formed in the chest; they become prematurely old, and are certainly short-lived; they are phlegmatic and bloodless, and exhibit their debility of constitution by obstinate attacks of dyspepsia, and disorders of the liver and kidneys, and by rheumatism. But of all diseases they are especially prone to chest-disease, to pneumonia, phthisis, bronchitis, and asthma. One form would appear peculiar to them, and is known as potter's asthma, or potter's consumption. Scrofula attacking the glands, or bones, or other parts of the body, is a disease

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[17] The theme of working conditions is most prominent in the novel *Hard Times*, which many critics have deemed Dickens's most scathing indictment of Victorian society. For example, in *The World of Charles Dickens* (London: Martin Secker & Warburg Limited, 1970), Angus Wilson states: "*Hard Times* is of the utmost importance in the extension and sharpening of Dickens's attitude to Victorian society. In it he comes out strongly against Victorian progress as it was viewed by the materialist, laissez-faire capitalists" (p. 235).

of two-thirds or more of the potters...[18]

In this same chapter, Marx also evaluates the effects of English governmental regulation on working conditions. This system of regulation is known as factory legislation. Charles Noble provides the following definition:

> [Factory legislation] refers to the supervision by government of employer practices, including the setting of detailed standards that mandate changes in the design of work and machinery and that are enforced by penalty-based inspections.[19]

Factory legislation became the cornerstone of American occupational safety and health policy. Indeed, one can consider the Occupational Safety and Health Act of 1970, which led to the creation of OSHA, to be an enhanced version of factory legislation as defined above. Thus, a survey of nineteenth century factory legislation, both in England and on the Continent, is useful for understanding the American experience.[20]

One can begin a discussion of nineteenth century English factory legislation by observing three basic trends. First,

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[18] *Children's Employment Commission, First Report*, London, 1863, p. 24, in Karl Marx, *Capital*, vol. I, trans. Ben Fowkes (New York: Random House, 1977), pp. 354-55.

[19] Charles Noble, *Liberalism at Work: The Rise and Fall of OSHA* (Philadelphia: Temple University Press, 1986), pp. 30-31.

[20] The following discussion of 19th Century English and German factory legislation is based upon material found in Teleky, pp. 22-43. A summary of this history is also found in Noble, p. 31.

occupational safety and health provisions were interspersed with provisions concerning general working conditions, such as hours of work. In addition, children were the first group of workers to benefit from regulation. Furthermore, the first sector to be regulated was the textile industry.

The Health and Morals of Apprentices Act of 1802, designed to protect children working in the textile industry, contained several occupational health provisions. Factory walls were to be whitewashed twice a year, and workplaces were to be adequately ventilated. Moreover, the Act implemented the first step in establishing a system of inspection: "visitors" who were appointed to inspect factories could order the adoption of sanitary regulations. However, since these positions were merely honorary, "visitors were rarely appointed and still more rarely were they active."[21] The Althorp Act of 1833, which also protected children in the textile industry, was more beneficial because it required the appointment of factory inspectors for its enforcement.

Accident prevention was first addressed in 1844, when legislation mandated the installation of guards on certain types of machines. Inspectors were authorized to issue written notice to an employer to place guards on dangerous machines immediately if they were missing, but the employer was permitted to refer the matter to arbitration. Factory inspectors were also authorized to appoint "certifying

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[21] Ibid., p. 22.

surgeons." An employer was required to report any accident to the certifying surgeon, who investigated the cause of the accident. The provision that any fines collected for employer noncompliance could be given to the worker injured in the accident demonstrates that the employer was held responsible for occupational safety. Finally, although the textile industry was still the only affected sector, this law extended protection to women.

Laws passed during the 1860s extended protection beyond the textile industry to other sectors. In addition, legislation of the 1860s contained more extensive regulation of occupational safety and health for workers of both sexes and all ages.[22] While the protection of men often had been a tangential result of previous occupational safety and health provisions, such provisions were designed primarily to aid children and women. Another milestone in the development of English factory legislation was the Factory and Workshop Act of 1878, which consolidated the system of factory inspection under a single central authority with a chief inspector in London.

Germany provides the best example of nineteenth century factory legislation on the Continent, although it experienced the Industrial Revolution half a century after England and was not unified until 1871. Both of these factors delayed

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[22] Ibid., p. 31.

Germany's efforts to regulate working conditions.[23]

The first unified effort to structure the field of labor legislation was the North German Confederation's adoption of the *Gewerbeordnung*, an industrial code regulating all aspects of labor and trade, in 1869. Under the *Gewerbeordnung*, every German state had the right to appoint factory inspectors but was not required to do so.

With the achievement of political unity in 1871, the *Gewerbeordnung* was incorporated into the German Empire's industrial code, the *Reichsgewerbeordnung*. In 1878 the *Reichsgewerbeordnung* was amended to mandate factory inspection throughout the Empire.

Despite the late appearance of unified German labor regulation, the traditional predisposition of German governments to intervene in the private sector was conducive to the growth of this type of regulation.[24] In England, where

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[23] The author of this thesis is referring to the efforts of a unified German state for purposes of comparison to England. This author is not suggesting that the independent German states failed to regulate working conditions. On the contrary, Teleky provides examples to demonstrate that the independent German states did regulate working conditions before achieving political unity in 1871 (pp. 41-42). However, he notes that the decentralization of power hinders research attempts to assemble a comprehensive history of German labor legislation before 1871 (p. 40).

[24] Ibid., p. 39. One could cite the West German policy of *Mitbestimmung*, or codetermination, to support the argument that this tradition is still apparent today. Noble defines codetermination as "efforts to involve workers, through their unions, in corporate decision making" (p. 35). He notes that this concept includes decisions about occupational safety and health.

Adam Smith's "invisible hand" and the capitalist doctrine of laissez-faire were firmly implanted, labor regulation was stridently opposed by business interests.[25]

## Scope of the Thesis

Similarly, business interests in the U.S. have continually contested occupational safety and health regulation. OSHA's regulation of occupational exposure to toxic substances provides an especially relevant example because it is an area of scientific uncertainty. Business interests, as well as organized labor and other groups with a stake in the issue, can manipulate the information which they present to policy makers but at the same time legitimate such manipulation by claiming scientific objectivity.

Thus, the fundamental issue which this thesis examines is the extent to which political considerations *should* influence regulatory policy under conditions of scientific uncertainty. The work begins with an overview of the historical foundations of U.S. occupational safety and health policy. Chapter I traces the development of U.S. policy from its origins as a patchwork of state policies and private initiatives to the emergence of occupational safety and health on the federal policy agenda. The chapter then discusses the legislative process which led to the creation of OSHA and examines the evolution from safety to health concerns which

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[25] Teleky, pp. 23, 39.

has characterized OSHA's policy development. Finally, Chapter I concludes with a consideration of whether participants in the creation of the federal regulatory program were aware that such an evolution would occur.

Chapter II outlines the regulatory framework for occupational exposure to toxic substances. It begins with an exploration of risk assessment, the foundation of OSHA's regulatory process. The chapter then addresses the promulgation of standards and provides an overview of OSHA's standard-setting activity for toxic substances. After a brief discussion of inspection, enforcement, and the role of the independent commission, the chapter concludes with an examination of judicial review of standards under conditions of scientific uncertainty.

Chapter III applies the history included in Chapter I and the framework discussed in Chapter II to OSHA's regulation of formaldehyde. After examining formaldehyde's chemical properties and the health effects of occupational exposure, the chapter reviews the history of formaldehyde regulation, the new standard which was promulgated in December 1987, and subsequent developments. In accordance with the fundamental issue of the thesis, Chapter III emphasizes the role which subjective, political factors have played in OSHA's regulation of formaldehyde.

This thesis concludes that regulatory policy under conditions of scientific uncertainty should take subjective,

political factors into account. However, some elements of the regulatory policy process can take such factors into account better than other elements. Accordingly, the conclusion of the thesis examines the appropriate roles of Congress, the judiciary, and the bureaucracy in OSHA's regulation of occupational exposure to toxic substances.

# CHAPTER I

# THE ORIGINS OF OCCUPATIONAL SAFETY AND HEALTH POLICY IN THE UNITED STATES

> The Congress declares it to be its purpose and policy...to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources...[1]
>
> Occupational Safety and Health Act of 1970

## U.S. Policy Before OSHA

Before the creation of OSHA, U.S. occupational safety and health policy consisted of an amalgam of state policies and private, voluntary action among firms. Although the federal government initiated regulation during the New Deal era, its involvement was limited.[2]

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[1] Pub.L. 91-596, Sec. 2, Dec. 29, 1970, 84 Stat. 1590, 29 U.S.C.A. Sec. 651(b) (1985).

[2] An extensive history of U.S. policy before OSHA is found in Charles Noble, *Liberalism at Work: The Rise and Fall of OSHA* (Philadelphia: Temple University Press, 1986), pp. 39-67. A summary is found in Nicholas Ashford, *Crisis in the Workplace: Occupational Disease and Injury, A Report to the Ford Foundation* (Cambridge, Mass.: The MIT Press, 1976), pp. 47-52. Much of the material in this section is drawn from these sources.

Factory legislation has generally served as the foundation of both state and federal regulatory programs.[3] Massachusetts instituted the nation's first Department of Factory Inspection in 1867 and adopted the first occupational safety law in 1877.[4] By the early twentieth century, most states had implemented some form of factory legislation regulating occupational safety and health.[5]

While states continued to use factory legislation as their primary regulatory method throughout the twentieth century, such programs were ineffective for several reasons.[6] First, their major weakness was their reliance upon voluntary cooperation by industry, since agency enforcement powers were often significantly restricted. The division of authority among various state agencies also contributed to ineffectiveness. Furthermore, because state programs were

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[3] From a comparative perspective, Noble discusses methods of governmental intervention which have not been used in the development of American occupational safety and health policy (p. 35). Some of these methods allow employees to participate more extensively in in-plant and enforcement programs. An example is codetermination, which is discussed in footnote 24 of the Introduction.

[4] Roland P. Blake, ed., *Industrial Safety* (Englewood Cliffs, N.J.: Prentice-Hall, 1963), pp. 13, 22, in Ashford, p. 47; Steven Kelman, "Occupational Safety and Health Administration," in James Q. Wilson, ed., *The Politics of Regulation* (New York: Basic Books, 1980), p. 238; Noble, p. 31.

[5] Kelman, "Occupational Safety and Health," p. 238, citing Ashford, pp. 47-50; Noble, p. 31.

[6] Noble, pp. 56-57.

often poorly funded, staffing shortages were common. Such shortages meant a smaller number of inspectors, and, consequently, a lack of enforcement. Moreover, state regulation usually focused upon safety at the expense of health concerns. In addition, many states relied upon weak and outdated standards. Finally, the effectiveness of state programs was directly proportional to the level of industrial development and unionization. In other words, highly industrialized states with strong unions provided better protection than states with less industrial development and unionization.

States supplemented their regulatory programs with policies to compensate workers for job-related injuries. Early policies focused upon legal liability. Using tort law, an employee could recover compensatory damages for injuries caused by the employer's failure to provide safe working conditions. Legal liability should have functioned as an incentive system to alter the behavior of firms. In other words, unsafe firms should have improved working conditions because they faced the possibility of paying large compensatory awards to injured employees.

However, three strong defenses against such suits were traditionally available to employers. First, the assumption-of-risk doctrine predicated that the employer could not be found liable if the hazard was an inherent part of the job. Thus, when the employee accepted the position, he also

accepted the risk that he might be injured. In addition, according to the fellow-servant doctrine, the employer was not liable if he proved that another employee's negligence contributed to the injury. Similarly, the employer could not be found liable under the contributory-negligence doctrine if he proved that the employee's actions caused his own injury.

Legal liability was superseded by the workers' compensation insurance system in the early twentieth century. Under this system, employers contribute to a fund which finances compensatory payments. In return for receiving regularly scheduled compensatory payments from the fund, workers relinquish the right to sue employers for damages. If employers are experience rated, or charged insurance premiums based upon their safety records, this system can also function as an incentive for employers to improve working conditions.

Because of the effectiveness of the defenses discussed above, Noble asserts that the policy shift to worker's compensation benefitted the employee.[7] However, he also notes that this change was advantageous to business because it regularized the cost of safety and health.[8] In other words, workers' compensation insurance eliminated the risk of paying potentially exorbitant compensatory awards. For this reason, the American Federation of Labor (AFL) resisted the

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[7] Ibid., p. 54.

[8] Ibid., pp. 42-43.

implementation of a workers' compensation system.[9] Rather, the organization favored strengthening the existing legal liability system. However, business interests dominated the policy debate, and the AFL belatedly endorsed workers' compensation.

This shift in occupational safety and health policy was only one of the results of a strategy of preemptive reform established by industry during the Progressive era.[10] Business often supported the adoption of moderate reforms, such as workers' compensation, in order to allay the concerns of workers before they became an impetus for protest. Of course, protest could have served as a catalyst for the adoption of policies detrimental to industrial interests. Thus, business maintained control of the policy agenda. In terms of occupational safety and health policy, preemptive reform continued until the creation of OSHA.

It is important to note that workers' compensation has remained an integral part of occupational safety and health policy. Indeed, President Lyndon Johnson considered reforming the workers' compensation system as a concomitant to establishing a federal occupational safety and health regulatory program in the late 1960s.[11] While organized labor supported reform, the President's advisors realized that the

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[9] Ibid., p. 43.

[10] Ibid., p. 41.

[11] Ibid., pp. 88-89.

states and insurance interests would strongly resist federal initiatives in this area. Thus, the potentially limited reforms which might have been achieved would not have justified the political battles required to implement the program. Consequently, the states have maintained control of the system, although the federal government does administer a few narrowly defined compensation programs.

Despite the continuing importance of compensation programs, a caveat is that their existence does not eliminate the need for regulatory policy. The incentives inherent in these programs are not strong enough in and of themselves to ensure that employers will provide safe and healthy workplaces. Thus, the most appropriate function of compensation programs is to supplement regulatory policy.

In addition to a patchwork of state policies, occupational safety and health before OSHA was also characterized by private, voluntary action among business interests. Again, by seizing the initiative, industry could control the policy agenda, just as it had in the adoption of workers' compensation. For example, with motives of self-interest, U.S. Steel extensively promoted occupational safety and health among its employees.[12] Not only did public concern about working conditions focus upon the steel industry because of its poor safety record, but the company may also have feared that a deterioration in working conditions might

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[12] Ibid., p. 41.

stimulate unionization efforts.[13]

Private, voluntary action by industry in the establishment of safety and health standards has had the most significant consequences for future policy formation. Although professional associations were the first organizations to establish standards, the objectivity of these groups was questionable because business interests often exercised influence among them. The development of the United States of America Standards Institute (USASI), the predecessor of the American National Standards Institute (ANSI), provides an example.[14] The organization was founded by professionals in conjunction with the Departments of War, Commerce, and Navy to encourage the standardization of industrial products and processes. However, during the 1920s, an increasing number of business interests began to exercise influence within the organization. Later, when the organization began to establish occupational safety and health standards, industry could exert this influence over the standard-setting process.

Tracing the role of industry throughout ANSI's history is especially relevant because ANSI continues to be one of the most important private sources of standards. Indeed, at OSHA's inception, the agency adopted many ANSI standards to serve as federal standards. Thus, one could conclude that OSHA adopted standards which favored business interests. The following

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[13] Ibid., p. 41; see also p. 250, note 5.

[14] Ibid., p. 44.

excerpt from a 1970 Labor Department report supports this assertion:

> One of the weaknesses of the standards process, in respect to occupational safety and health standards and consumer goods standards has always been that the consumer, the working man or the housewife, has always spoken with a very weak voice in the councils of the standardizing bodies.[15]

An exception to the rule of corporate influence of standard-setting involves the American Conference of Governmental Industrial Hygienists (ACGIH).[16] This organization was formed in the 1930s by reformers in the industrial hygiene profession who were dissatisfied with industry's increasing influence in their field. It became important for future policy development because it established threshold limit values (TLVs) for exposure to toxic substances, and OSHA used these limits in many of the health standards adopted at the agency's inception.

The first significant federal endeavor in the field of occupational safety and health regulation occurred during the New Deal.[17] The Walsh-Healey Act of 1936 includes a safety and health provision, June 30, 1936, c. 881, Sec. 1, 49 Stat. 2036, as amended, 41 U.S.C.A. Sec. 35(e) (1987). This

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[15] *Standards and Regulations, Report.* Department of Labor, Record Group 174, James D. Hodgson, 1970, File LL-2-3, OSH, National Archives, in Noble, pp. 45-46.

[16] Noble, pp. 46-47.

[17] Appendix I discusses federal regulation of mine safety and health before the New Deal.

legislation was originally designed as a provisional measure to establish minimum wages on federal contracts exceeding $10,000 until the constitutionality of a permanent, general minimum wage law could be determined.[18] Although the safety and health provision was not central to the legislation, it was included to ensure that firms competing for federal contracts would not compromise working conditions in order to compensate for their higher wage costs.[19] While the adoption of the Act was an important milestone because it marked the beginning of federal jurisdiction over occupational safety and health, federal reliance upon state programs and enforcement is apparent in the provision:

> ...no part of such contract will be performed nor will any of the materials, supplies, articles, or equipment to be manufactured or furnished under said contract be manufactured or fabricated in any plants, factories, buildings, or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of said contract. Compliance with the safety, sanitary, and factory inspection laws of the State in which the work or part thereof is to be performed shall be prima-facie evidence of compliance with this subsection, 41 U.S.C.A. Sec. 35(e) (1987).

Despite the progress in federal policy associated with the Walsh-Healey Act, one can generally conclude that solving the economic problems caused by the Great Depression took

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[18] Noble, p. 57.

[19] Ibid., pp. 57-58.

precedence over safety and health efforts.[20] Similarly, Nicholas Ashford asserts that interest in the topic decreased during World War II, again because the nation faced other pressing problems.[21] However, Noble contends that interest in occupational safety and health increased during the period because of public concern about conserving scarce labor resources.[22] Noble cites as evidence the fact that war boards often urged employers to improve working conditions and that the social security system was used to finance state programs through grants-in-aid to state agencies.[23]

Both Noble and Ashford agree that occupational safety and health became an issue of low priority during the postwar era.[24] The chief reason was that the system of industrial relations promoted by the federal government throughout the New Deal and World War II restricted debate on labor policy to economic issues. Most important, occupational safety and health was not recognized by the National Labor Relations Board (NLRB) as a mandatory subject for collective bargaining until 1966.[25] However, one must note that organized labor also encouraged this emphasis upon economic issues in collective

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[20] Ashford, p. 51.

[21] Ibid.

[22] Noble, p. 58.

[23] Ibid.

[24] Ibid.; Ashford, p. 52.

[25] Noble, p. 52; Ashford, p. 493.

bargaining.[26] Furthermore, it focused its lobbying efforts upon full employment and economic security policies as well.[27]

Only the United Auto Workers (UAW) provided an exception to the rule by promoting occupational safety and health programs, especially in contract negotiations. In a recent interview, former UAW president Douglas Fraser commented on the relationship between collective bargaining and working conditions:

> We have OSHA...which is helpful in setting standards in those places that don't have a union and those places that have a weak union. OSHA doesn't help the auto workers and steel workers because we're strong enough ourselves to discipline the company...If plants aren't safer today, the union isn't doing its job.[28]

Later in this thesis, the UAW's use of other methods to influence policy will be examined. Specifically, the union's activity regarding the regulation of formaldehyde will demonstrate that it continues to lead advocacy efforts for occupational safety and health.

Because organized labor did not emphasize occupational safety and health, the Department of Labor did not have an incentive to propose comprehensive policy initiatives. Nevertheless, the Department continued to extend its

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[26] Noble, pp. 48-53; Ashford, pp. 492-93.

[27] Noble, p. 49.

[28] Dan Shope, "Douglas Fraser's finger still on the pulse of labor," *The Morning Call* [Allentown, PA], May 28, 1989, p. D11.

jurisdiction incrementally in certain industries during the postwar era. For example, amendments passed in 1958 enabled the Secretary of Labor to regulate safety and health for workers covered by the Longshoremen's and Harbor Workers' Compensation Act, Pub.L. 85-742, Sec. 1, Aug. 23, 1958, 72 Stat. 835, as amended, 33 U.S.C.A. Sec. 941 (1986).[29] Moreover, the Service Contract Act of 1965 extended protection to those employed by the federal government's service suppliers, Pub.L. 89-286, Sec. 2, Oct. 22, 1965, 79 Stat. 1034, as amended, 41 U.S.C.A. Sec. 351(a)(3) (1987). Hence, by the late 1960s, the Department of Labor regulated some aspect of occupational safety and health for over half of the nation's workforce, as shown in Table 1.1.

However, federal regulatory programs were often poorly funded, and they generally relied upon enforcement by the states, as noted in the discussion of Walsh-Healey.[30] For reasons previously discussed, state enforcement was generally ineffective. Furthermore, this situation led to jurisdictional disputes between the federal and state governments.[31] In this environment, industry could continue

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[29] An amendment changed all references to the Act from "Longshoremen's" to "Longshore," Pub.L. 98-426, Sec. 27(d)(1), Sept. 28, 1984, 98 Stat. 1654.

[30] An exception was the Service Contract Act, which granted the secretary of labor authority to develop and enforce regulations independently of the states (Noble, p. 252, note 35).

[31] Ibid., p. 60.

| Authority | Workers Covered[a] | Expenditure Per Worker[b] |
|---|---|---|
| Maritime Safety Act | | |
| Longshoring | 103,000 | $8.84 |
| Shipyards | 120,000 | 3.79 |
| Marine construction | 20,000-100,000 | 0.0 |
| Walsh-Healey Act | 25,000,000 | 0.01 |
| Service Contracts Act | 6,000,000 | 0.06 |
| Vocational Rehabilitation | 150,000 | 0.0 |
| Arts and Humanities Act | 10,000 | 0.0 |
| Federal Labor Standards Act | 8,250,000 | 0.01 |
| Federal Employment Compensation Act | 2,800,000 | 0.07 |
| TOTAL | 42,493,000 (56.7% of labor force) | 0.05 (average) |

Table 1.1. Department of Labor Jurisdiction, 1967.

Source: Charles Noble, *Liberalism at Work: The Rise and Fall of OSHA* (Philadelphia: Temple University Press, 1986), p. 59, citing *Current Department of Labor Responsibilities and Activities, Attachment Six* (Washington, D.C.: Department of Labor, 1968).

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[a] Citing *Current Department of Labor Responsibilities and Activities, Attachment Six* (Washington, D.C.: Department of Labor, 1968), Noble states: "The department estimated a workforce of 75 million workers and Department of Labor authority over almost 43 million workers. This estimate is based on Walsh-Healey Act coverage of approximately 25 million employees at one time or another each year. Other programs accounted for another 15 to 20 million workers. Note that this includes coverage of any part of the worker's day" (p. 252, note 35).

[b] Noble defines expenditure per worker as "the total expenditure per program divided by the number of workers covered by that program" (p. 59).

to exercise influence over occupational safety and health policy through private, voluntary action.

A clear, comprehensive occupational safety and health plan needed to be included on the federal policy agenda in order to ensure effective protection for all workers. As a representative of organized labor commented:

> We have worked with management whenever possible to [promote occupational safety and health], and we have urged the States to fulfill their responsibilities in this regard. These efforts have simply not been enough, as the record attests. It is time, and well past time, for the Federal Government to act. Much of what needs to be done is too large a job for any lesser entity.[32]

## Federal Agenda Formation

An interesting narrative is often presented to explain how occupational safety and health became an issue on the federal policy agenda.[33] It maintains that the brother of Robert Hardesty, one of President Johnson's speechwriters, worked at the Bureau of Occupational Safety and Health

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[32] Statement of Alan Burch, International Union of Operating Engineers, in U.S. Congress, House of Representatives, *Hearings before the Select Subcommittee on Labor of the Committee on Education and Labor*, 90th Cong., 2nd sess., February 1-March 14, 1968, p. 277. Hereafter in this chapter cited as *House Hearings, 1968*.

[33] The narrative is found in Kelman, "Occupational Safety and Health," p. 239. On p. 429, note 12, Kelman cites chapters 7 and 8 of Joseph A. Page and Mary-Win O'Brien, *Bitter Wages* (New York: Grossman, 1973) as the source. Noble refers to this narrative as the "standard explanation" (p. 81) and also cites Page and O'Brien as the source (p. 256, note 25).

(BOSH).[34] Consequently, Hardesty became informed about occupational safety and health from his brother and included references to the topic in presidential speeches.

During this period, Esther Peterson, an assistant secretary in the Department of Labor, investigated reports of a high incidence of lung cancer among uranium miners. After visiting with miners and their families, Peterson became so interested that she pressed the issue personally with Labor Secretary Williard Wirtz.

The combination of references to the topic in previous presidential speeches and Peterson's investigation led the Labor Department to include a draft of an occupational safety and health bill in a package of legislative proposals to the President. The President called for a new occupational safety and health program in his 1968 Manpower Message, although the Labor Department had not exerted much pressure on him to do so. As Secretary Wirtz later commented: "We didn't know, frankly, till several days before the Message that the President had decided to make occupational safety and health a principal element in his program this year."[35]

Using this account as his basis, Kelman describes the process by which occupational safety and health became

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[34] This agency in the Department of Health, Education, and Welfare (HEW) functioned as a research body but did not have regulatory authority.

[35] Page and O'Brien, *Bitter Wages*, p. 140, in Kelman, "Occupational Safety and Health," p. 239.

included on the federal agenda as "idiosyncratic."[36] He asserts that the promotion of occupational safety and health by the Department of Labor and President Lyndon Johnson in the late 1960s was not a result of the activity of interest groups, such as organized labor. Rather, through a chain of coincidences, officials who were searching for "good causes" to promote chose occupational safety and health as such a cause.

Clearly, Kelman's interpretation of the narrative is too simplistic. It does not explain the underlying forces at work in the process of federal agenda formation. Noble summarizes the narrative's relevance as follows:

> Although accurate in one respect--the fraternal connection was real--this account is misleading. It suggests that the policymaking process in this instance was more *serendipitous* than it actually was, and it argues for the view that the issue and the [Occupational Safety and Health] Act were poorly understood or thought out.[37]

The most plausible explanation of how occupational safety and health became included on the federal policy agenda takes into account the transformation of the agenda itself during the 1960s.[38] The economic prosperity of the period bolstered the expansion of the agenda to include new social programs, such as President Johnson's Great Society, as well as

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[36] Kelman, "Occupational Safety and Health," pp. 239-40.

[37] Noble, p. 81. Emphasis added by this author.

[38] Ibid., pp. 68-69.

initiatives in environmentalism and consumer product safety, two policy areas related to occupational safety and health.

Although the combination of a new agenda and a sound economy eventually convinced organized labor to shift its focus from tangible, economic gains to nonwage demands by the late 1960s, union support for occupational safety and health was slow to appear for several reasons. Especially relevant to this thesis, the impediments were related to occupational health. First, Noble asserts that certain high-ranking union officials, including George Meany, were aware of the occupational health problem but simply indifferent to its promotion.[39] They preferred to limit union activity to the traditional economic sphere. However, the more common situation among members of organized labor was their ignorance of the occupational health problem because of the paucity of information available about health hazards. For example, the comments of Douglas Fraser are illustrative:

> In our time, we were ignorant in terms of the chemical substances in the work place. I remember in the machine shop where guys would get rashes from the tip of their fingers up their arms because of the fluid in the cutting oil. We'd just say the guy had sensitive skin.[40]

The promotion of occupational health began when the growth of the environmental, consumer product safety, and

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[39] Ibid., p. 71.

[40] Shope, "Douglas Fraser's finger still on the pulse of labor," p. D11.

public interest movements increased awareness of the problem among a small group of union leaders. Environmentalists were especially important in this process. For instance, Anthony Mazzochi, a leader of the Oil, Chemical, and Atomic Workers (OCAW) during the period, credits environmentalists with showing him how occupational health and environmental issues were linked.[41] Mazzochi and others formed an alliance with the environmentalists to capitalize upon the linkage. The alliance focused upon presenting the in-plant environment as an extension of the outdoor environment.[42] Thus, occupational health was framed as an issue affecting not only organized labor, but also all other workers and the entire population. In this manner, organized labor legitimated the issue as a concern of a broad constituency, rather than a "special" interest of unions.[43]

The testimony of one Mazzochi's colleagues from the OCAW before a House subcommittee in 1968 demonstrates the philosophy of the alliance:

> Our local feels very strongly that Federal legislation of the sort embodied in this bill is an absolute necessity for the protection not only of the workers in the plants but also the general public, particularly those people who live near

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[41] Noble, p. 255, note 18.

[42] Ibid., p. 78; see also p. 255, note 19.

[43] Ibid., p. 78.

the plants.[44]

In addition to the efforts of this small group of union leaders, the other factor which contributed to organized labor's adoption of occupational safety and health was the increase in union rank-and-file discontent during the 1960s.[45] Specifically, rank-and-file members who were employed in particularly dangerous occupations organized their own grass-roots movements to promote occupational safety and health. The wildcat protests of coal miners in West Virginia and Kentucky exemplify this type of discontent. Their activities contributed to the awareness of organized labor as a whole and the public. Moreover, their efforts led to the adoption of the Federal Coal Mine Health and Safety Act of 1969, Pub.L. 91-173, Dec. 30, 1969, 83 Stat. 742, as amended, a watershed in the history of U.S. mine safety and health regulation.[46]

This Act enabled the Secretary of the Interior to promulgate mandatory safety and health standards for underground mines. Enforcement powers were vested in the Interior Department's Bureau of Mines. It also guaranteed compensation to miners disabled by black lung disease or their widows and funded research on the disease. The comprehensive

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[44] Statement of R. L. Barnes, President of Local 4-367 of the Oil, Chemical and Atomic Workers International Union, in *House Hearings, 1968*, p. 383.

[45] Noble, pp. 70-71.

[46] Subsequent amendments and changes in regulatory activity are discussed in Appendix I.

protection provided by this legislation served as an impetus for the adoption of a general occupational safety and health law.

In sum, the activities of a small group of union leaders and rank-and-file members convinced organized labor as a whole to adopt the issue and garnered public support. Consequently, the Johnson Administration had several political motives for promoting occupational safety and health, rather than a mere search for "good causes," as Kelman suggests. For instance, while organized labor had traditionally composed a stalwart faction of the Democratic Party, there was evidence that labor had begun to turn away from the Party because of its increased emphasis on civil rights during this period.[47] Hence, promoting occupational safety and health would appease organized labor. An additional political benefit was related to the alliance discussed above. Traditionally, the middle class had been skeptical about supporting labor issues because it viewed organized labor as a "special interest."[48] However, because the middle class formed the basis of support for the environmental, consumer, and public interest movements, occupational safety and health was an exception.[49]

Moreover, economic factors also led Johnson to promote the issue. Despite the period's prosperity, increasing

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[47] Noble, p. 80.

[48] Ibid., p. 81.

[49] Ibid.

involvement in Vietnam was draining resources at the same time that the Great Society's new, expensive social programs were being implemented. Occupational safety and health was a social program in the tradition of the Great Society but less costly to implement.[50]

Finally, concern about the increasing industrial accident rate of the late 1960s, shown in Figure 1.1, may have contributed to the emergence of occupational safety and health on the federal policy agenda. As previously discussed, while information about occupational health hazards was limited, data on industrial injuries were traditionally available.

In conclusion, the transformation of the federal policy agenda during the 1960s offers the best explanation of the emergence of occupational safety and health as an issue on that agenda. The period's prosperous economy enabled an expansion of the agenda. Both of these factors led organized labor to shift its focus from tangible, economic gains to nonwage demands, such as occupational safety and health. This process began with certain foresighted labor leaders who realized the importance of occupational health and formed an alliance with the leaders of other movements, especially the environmentalists. Their efforts, along with rank-and-file protest, contributed to organized labor's adoption of the issue and garnered public support. Furthermore, political and economic motives caused President Johnson to promote

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[50] Ibid., pp. 79-80.


Figure 1.1. Manufacturing Work Injury Rates, 1956-70.

Source: Charles Noble, *Liberalism at Work: The Rise and Fall of OSHA* (Philadelphia: Temple University Press, 1986), p. 62, citing Robert S. Smith, *The Occupational Safety and Health Act* (Washington, D.C.: American Enterprise Institute, 1976), figure 1.

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[a] "Injury rates are adjusted for cyclical changes in overtime, hiring, and capacity utilization," Charles Noble, *Liberalism at Work: The Rise and Fall of OSHA* (Philadelphia: Temple University Press, 1986), p. 62.

occupational safety and health. Finally, an increasing industrial injury rate during the period contributed to the emergence of occupational safety and health as an issue on the federal policy agenda.

How did business lose control of the policy agenda? As previously discussed, industry had maintained control of the policy agenda through its reliance upon private, voluntary action until the 1960s. Ironically, by rigidly continuing to espouse private, voluntary action instead of adapting to a changing socio-political environment, business lost control of the agenda. As Noble asserts, industry refused to admit that a need for federal regulation existed although the trend in all policy areas during the period was toward federal intervention.[51]

Similarly, business could have tried to reassert its interests in the legislative process by using its old technique of seizing the initiative. However, instead of compromising, business continued to assume a defensive posture. An examination of the legislative process will show that this ineffective strategy resulted in the adoption of a law which was *stronger* than Johnson's original proposal.[52]

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[51] Ibid., pp. 83, 86.

[52] Ibid., pp. 93-94.

## Legislative History of the Occupational Safety and Health Act of 1970

The Occupational Safety and Health Act of 1970, Pub.L. 91-596, Dec. 29, 1970, 84 Stat. 1590, as amended, 29 U.S.C.A. Sec. 651 et seq. (1985), provides the statutory framework for the federal government's regulatory program. Table 1.2 provides a summary of the legislative history of the Act.

As previously mentioned, the legislative process began with President Johnson's outline of an occupational safety and health bill in his Manpower Message of 1968. The administration's bill was introduced into the House of Representatives by Congressman James O'Hara (D-Michigan) and into the Senate by Senator Ralph Yarborough (D-Texas).

O'Hara-Yarborough contained several key provisions. First, it directed the Secretary of HEW to conduct an extensive research program as the basis for developing comprehensive safety and health standards. In addition, the secretary of labor was granted both the power to promulgate standards and the authority to enforce them. Furthermore, the secretary of labor was also granted the power to inspect workplaces and to close down operations which posed imminent danger to employees. Finally, the bill provided for federal assistance to states to develop and strengthen their own occupational safety and health programs.

Provisions of the O'Hara-Yarborough bill sparked several debates which continued throughout the legislative process.

| Jan. 1969 | Aug. 1969 | Mar. 1970 | Sept. 1970 | Nov. 1970 | Dec. 1970 |
|---|---|---|---|---|---|
| H.R. 3809<br>O'Hara,D-MI | H.R. 13373<br>Ayres,R-OH | H.R. 16785<br>Daniels,D-NJ | H.R. 19200<br>Steiger,R-WI | House approves H.R. 19200 over H.R. 16875. | Conference Committee Bill |
| **Provisions**<br>Sec. of HEW to conduct research and develop criteria for standards.<br><br>Sec. of Labor to set and enforce standards. | **Provisions**<br>Independent board to set and enforce standards. | **Provisions**<br>Similar to H.R. 3809 plus a general duty clause.<br><br>Numerous worker rights. | **Provisions**<br>Revision of H.R. 13373.<br><br>Standards to be set by independent board and enforced by independent commission. | | **Provisions**<br>Sec. of Labor to set and enforce standards.<br><br>Independent commission for enforcement review.<br><br>NIOSH in HEW. |

| May 1969 | Aug. 1969 | Sept. 1970 | Nov. 1970 |
|---|---|---|---|
| S. 2193<br>Williams,D-NJ | S. 2788<br>Javits,R-NY | S. 4404<br>Dominick,R-CO | Senate approves S. 2193 (committee bill similar to H.R. 16785, final bill includes Javits amendments). |
| **Provisions**<br>Similar to H.R. 3809. | **Provisions**<br>Senate version of H.R. 13373. | **Provisions**<br>Senate version of H.R. 19200. | |

Table 1.2. Legislative History of the Occupational Safety and Health Act of 1970.

Source: Adapted from Nicholas Ashford, *Crisis in the Workplace: Occupational Disease and Injury, A Report to the Ford Foundation* (Cambridge, Mass: The MIT Press, 1976), pp. 54-55.

One argument involved whether the federal government should adopt established standards or develop new ones. This point was critical because standard-setting had often been subject to business influence, as previously discussed. A second debate was concerned with whether promulgation of standards and enforcement powers should be concentrated within the same body, specifically, the Department of Labor. Both organized labor and business agreed that the Labor Department would be more sympathetic to labor's interests.[53] Furthermore, argument over the imminent danger provision also continued throughout the legislative process.

Business opposition resulted in the House Education and Labor Comittee's reporting a bill which limited the labor secretary's authority to promulgation of standards previously established by private organizations.[54] Even with this amendment, industry continued to oppose the bill, and the Rules Committee would not clear it.[55] Several analysts assert that the unions still did not support the bill wholeheartedly at this time.[56] Contributing to the demise of the bill was President Johnson's decision not to run for reelection amid

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[53] Ibid., pp. 90-91.

[54] Benjamin L. Brown, "A Law Is Made--The Legislative Process in the Occupational Safety and Health Act of 1970," *Labor Law Journal* 25 (1974), p. 597.

[55] Ibid.

[56] Page and O'Brien, *Bitter Wages*, p. 141, in Ashford, p. 53; Kelman, "Occupational Safety and Health," p. 241; Noble, p. 71.

the political turmoil of racial tensions and Vietnam. Here, one can observe a parallel to the Great Depression and World War II eras: other important national problems overshadowed occupational safety and health.

Although industry thought that President Richard Nixon would be more sympathetic to its interests, the new administration continued the drive for a federal regulatory program. Because the issue was already on the federal policy agenda, and congressional activity concerning the Federal Coal Mine Health and Safety Act sustained public interest in the issue, it would have been politically unwise for Nixon to withhold his support.[57] In addition, Nixon favored an occupational safety and health program for political motives similar to his predecessor's. Just as Johnson had attempted to use occupational safety and health to appease organized labor, Nixon used the issue as part of his attempt to lure blue-collar voters away from an increasingly divided Democratic Party. However, although Nixon could not table the program, he could propose a regulatory scheme which favored business interests.

Early in 1969, the Democrats introduced into the 91st Congress legislation similar to that which had died in committee the previous year. Once again, Representative O'Hara sponsored the major version in the House, while Senator Harrison Williams (D-New Jersey) introduced a corresponding

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[57] Noble, pp. 89-90.

bill into the Senate. In August 1969, the administration's bill was introduced into the House by Representative William Ayres (R-Ohio) and into the Senate by Senator Jacob Javits (R-New York). Nixon's version differed substantially from the Democratic plan by vesting authority for setting and enforcing standards in a new National Occupational Safety and Health Board, whose members were to be appointed by the president, rather than in the Secretary of Labor. As previously discussed, removing authority from the Department of Labor favored business interests.

During 1969 and 1970, both the House and Senate Labor Subcommittees conducted hearings on occupational safety and health. Finally, organized labor as a whole supported the cause. As Kelman notes: "In 1969 occupational safety and health legislation became an important priority for AFL-CIO lobbyists."[58] Labor backed O'Hara-Williams, while business supported the President's proposals.

In March 1970, Representative Dominick Daniels (D-New Jersey) introduced into the House a stronger version of the O'Hara bill which provided for more employee involvement in the regulatory process and included a general duty clause. With roots in common law, this clause provides broad protection to workers by stating that an employer has an obligation to provide a safe and healthful work environment apart from specific standards. In other words, an employer

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[58] Kelman, "Occupational Safety and Health," p. 241.

who meets established standards is nevertheless held responsible for failing to protect workers from hazards which the standards do not specifically enumerate. The Daniels bill was approved by the House Labor Committee in June 1970.

In September 1970, another round of activity occurred in both houses. Representatives William Steiger (R-Wisconsin) and Robert Sikes (D-Florida) cosponsored a revised version of the Ayres bill in the House. Although the Williams bill was reported out of committee in the Senate, Senator Peter Dominick (R-Colorado) introduced the Steiger version. The Steiger bill included more worker protections--similar to those in the Daniels bill--than previous administration proposals, but it further divided authority for the program. Standards were to be promulgated by a National Occupational Safety and Health Board but enforced by an independent Occupational Safety and Health Appeals Commission. The Labor Department would share some enforcement responsibility through the inspection process. Again, it is important to note how this Republican division of authority would favor business interests.

In November 1970, both houses approved final versions of their respective bills. The House passed the Steiger bill. The Senate approved a revised version of the Williams bill, similar to the Daniels bill in the House. The final version of the Senate bill also included amendments by Senator Javits. The Javits amendments provided a critical compromise: they

created an independent three-member Occupational Safety and Health Review Commission to exercise final administrative review of enforcement cases, although both standard-setting authority and initial enforcement authority remained with the Secretary of Labor. In addition, the Javits amendments elevated the BOSH to National Institute status. The newly created National Institute of Occupational Safety and Health (NIOSH) would be responsible for formulating and recommending safety and health standards to the Department of Labor. In sum, although compromise characterized the bills in both houses, one can assert that the Senate's final version reflected the proposals of Democrats and organized labor, while the House's final version manifested the reasoning of Republicans and management.[59]

In December 1970, a joint conference committee reconciled the two conflicting bills. Organized labor played a vital role in the reconciliation process by exerting pressure on the committee regarding the standard-setting process.[60] Labor decided that the provision upon which it would not compromise was granting the Department of Labor authority to set standards so that they would not favor industrial interests. In order to ensure the inclusion of this provision, labor communicated its willingness to compromise on other points to

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[59] Ashford, p. 56.

[60] Page and O'Brien, *Bitter Wages*, p. 178, in Ashford, pp. 56-57.

Senator Williams and Representative Carl Perkins (D-Kentucky), two Democratic members of the conference committee. Therefore, the conference committee adopted the Senate's provisions which granted the Secretary of Labor standard-setting and initial enforcement authority, and the House's provisions which created an independent Occupational Safety and Health Review Commission to exercise final administrative review of enforcement cases. Ironically, "while [the Act] has Steiger's name on it, it contains almost none of his provisions."[61]

The conference committee also retained the Javits proposal creating NIOSH. Thus, although the secretary of labor could immediately promulgate established standards, NIOSH would provide criteria for original standards in the future. Since the joint committee adopted most of the Senate's provisions, the Senate agreed to compromise upon the imminent danger provision. While the Senate version had allowed the secretary of labor to close down operations even if there was insufficient time to obtain a court order, the House required a court order in all cases.

Finally, the Senate and House passed the conference bill on December 16 and December 17, respectively. On December 29, 1970, President Nixon signed the Occupational Safety and Health Act of 1970 into law. OSHA was created within the

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[61] Noble, p. 93.

Department of Labor in 1971.[62]

## An Evolution from Safety to Health

This chapter has examined the development of U.S. occupational safety and health policy in general, although the topic of this thesis, toxic substance regulation, lies within the specific boundaries of occupational health policy. As previously stated, safety issues have been an obvious policy concern because their urgency can be readily measured using traditional data on industrial injuries. On the other hand, the limited availability of data on occupational health hazards has hindered attempts to increase awareness of the problem among professionals, labor, and the public. However, knowledge about occupational health hazards has expanded during the past twenty years. Indeed, health issues now seem to take priority over safety concerns at OSHA.[63] Thus, one might observe that a policy evolution from safety to health has occurred.

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[62] Secretary of Labor's Order No. 12-71, 36 FR 8754 (1971).

[63] Arthur J. Amchan, "The Future of OSHA," *Labor Law Journal* 35 (1984), pp. 547, 559. The author of this thesis wants to emphasize that safety problems are just as critical as health hazards. For example, a recent study by the National Safe Workplace Institute, a private organization, reported that Americans are 30 times more likely to die from occupational injury than Swedes. The study also reported that Japanese are twice as safe on the job as Americans (Carl Hartman, "U.S. workplace fatalities called higher than other nations'," *The Morning Call* [Allentown, PA], September 3, 1989, p. A3).

Consequently, it is relevant to conclude this chapter with a consideration of whether the historical foundations of U.S. policy provide an adequate basis for current toxic substance regulation and its inherent problems. One variable which measures the adequacy of the historical basis is the level of awareness of occupational health among participants in the adoption of the Occupational Safety and Health Act of 1970 and the early years of OSHA.[64]

Since the Act does contain specific provisions dealing with health hazards, one can assert that participants in the creation of the federal program must have had at least a minimal awareness of the importance of occupational health, despite the limited availability of data during the period. As previously discussed, one can note an emphasis on occupational health among those representatives of organized labor who allied with the environmental movement, such as Tony Mazzochi and his colleagues from the OCAW.

However, as organized labor in general began to embrace occupational safety and health as an issue, it also became more aware of the importance of the health aspects of that issue. Kelman asserts:

> The impression here is that concern over industrial accidents, rather than exposure to chemicals, dominated--though not overwhelmingly. Of the union representatives testifying at the 1968 hearings, two stressed safety concerns,

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[64] Kelman, "Occupational Safety and Health," pp. 242-43 served as the impetus for this inquiry.

> two stressed health concerns, and four stressed both about equally.[65]

Most important, the testimony of George Meany during the 1968 House hearings on the occupational safety and health bill contains extensive references to the importance of occupational health. The following passage is illustrative:

> Every year thousands of workers die slow, often agonizing deaths from the effects of coal dust, asbestos, beryllium, lead, cotton dust, carbon monoxide, cancer-causing chemicals, dyes, radiation, pesticides, and exotic fuels. Others suffer long illnesses. Thousands suffer from employment in artificially created environments.[66]

Furthermore, in the following passage, Meany asserts that health hazards are as important as safety concerns:

> It makes little difference whether the hazard consists of an unprotected elevator shaft in a building under construction, asbestos particles inhaled by a worker in the pipefitting industry, radon daughters gas drawn into the lungs of an underground miner or the unusual noise and vibration experienced every working day by thousands of heavy equipment operators.[67]

Moreover, in an article written in 1974, Benjamin Brown, then Deputy Under Secretary of Labor for Legislative Affairs, addresses the evolving focus from safety to health.[68] He notes

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[65] Ibid., p. 243.

[66] Statement of George Meany, *House Hearings, 1968*, p. 704.

[67] Ibid., p. 705.

[68] Brown, "A Law Is Made."

that William Steiger, one of the sponsors of occupational safety and health legislation, recognized the importance of health concerns: "Steiger feels that the health aspect of OSHA will take precedence over the safety factors."[69] Demonstrating considerable foresight, Brown continues:

> And his prediction is echoed by appeals to do something about the newly discovered harm to workers by carcinogens and vinyl and polyvinyl chloride...And so here is a real test for administration of this law. Find a way under OSHA to regulate employee exposure to such substances as vinyl chloride without wiping out an industry and the worker's livelihood.[70]

In conclusion, there is evidence that participants in the adoption of the Occupational Safety and Health Act and the early stages of OSHA were aware that health concerns were important and, perhaps, that an evolution from safety to health would occur. While this conclusion means that the historical foundations of U.S. policy provide an adequate basis for toxic substances regulation, it is even more important to evaluate the subsequent development of the regulatory framework. This is the subject of Chapter II.

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[69] Ibid., p. 606.

[70] Ibid.

# CHAPTER II

# THE REGULATORY FRAMEWORK FOR OCCUPATIONAL EXPOSURE TO TOXIC SUBSTANCES

> The amount of protection given to the laboring class is determined not by the number of labor laws upon the statute books, but by the number of such laws which are properly administered, and by the extent to which their provisions are actually enforced.[1]
>
> U.S. Bureau of Labor Statistics
> February 27, 1914

## Risk Assessment

The foundation of the regulatory framework for occupational exposure to toxic substances is risk assessment. One can define this concept as the derivation of quantitative estimates of the health risks associated with toxic substances from scientific evidence. According to this definition, which is grounded in science, risk assessment appears to be an objective process. However, because uncertainty characterizes the scientific procedures and evidence upon which risk

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[1] George Price, "Administration of Labor Laws and Factory Inspection in Certain European Countries," *Bulletin of the U.S. Bureau of Labor Statistics*, Feb. 27, 1914, p. 9, in David Hemenway, *Monitoring and Compliance: The Political Economy of Inspection* (Greenwich, Conn.: JAI Press, 1985), p. 80.

assessment relies, one concludes that the process is chiefly *subjective*. In his discussion of scientific risk assessment, Steven Kelman comments:

> These days, most social scientists are trained to seek inspiration from the natural sciences and the canons of the scientific method. Social scientists frequently feel frustrated at the difficulties involved in applying the methods of the natural sciences to the testing of social science hypotheses. It would gratify some social scientists--and shock others--to learn just how frequently the application of the scientific method in the natural sciences runs into the same problems.[2]

Political and economic considerations can exercise much influence upon risk assessment because of its inherent scientific uncertainty. Accordingly, the author urges the reader to bear in mind a broad definition which encompasses scientific and technological elements as well as political and economic issues. Hence, this discussion will address the scientific issues involved in risk assessment and then relate those issues to policy decisions which have political and economic implications.

The major scientific issue in risk assessment is the reliability of data on the health effects of exposure. This issue is especially important in the regulation of occupational carcinogens. OSHA has relied primarily upon epidemiological evidence in setting standards for occupational

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[2] Steven Kelman, "Occupational Safety and Health Administration," in James Q. Wilson, ed., *The Politics of Regulation* (New York: Basic Books, 1980), p. 249.

carcinogens, but one must recognize the limitations inherent in these types of studies.[3] First, the long latency period of most occupational diseases hinders efforts to determine precisely what levels of exposure workers experienced. As discussed in Chapter I, ignorance of occupational health hazards in previous years meant that such information was neither monitored nor recorded. Moreover, researchers cannot determine all of the factors for which they should be controlling, such as other chemicals to which workers may have been exposed or lifestyle preferences. Finally, the sample of workers in epidemiological studies is usually small.

OSHA has often used bioassays to support the epidemiological studies and, in some cases, as the primary source of evidence.[4] The basic assumption of the bioassay is that, if a substance produces health effects at high levels of exposure, it must have similar effects at lower levels of exposure.[5] Problems with this reasoning result from the two types of extrapolation it requires. First, researchers must extrapolate from high-dose to low-dose exposures.[6] In addition, results must be extrapolated from animals to humans.

Extrapolation from animals to humans manifests several

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[3] John M. Mendeloff, *The Dilemma of Toxic Substance Regulation: How Overregulation Causes Underregulation* (Cambridge, Mass.: The MIT Press, 1988), p. 60.

[4] Ibid., pp. 60, 62.

[5] Ibid., p. 63.

[6] Ibid.

deficiencies.[7] One problem is that some strains of animals may be more sensitive to certain toxic substances than others, so that it is difficult to determine which strains provide the best analogy to humans. Furthermore, the method of administration is not the same for animals as for humans. For example, animals may be exposed to a substance through feeding, while humans are exposed to it through inhalation. Moreover, it is difficult to determine which factor to use for the extrapolation. Researchers must choose between body weight, surface area of body, or some other factor. Finally, there is uncertainty about whether the metabolism of toxic substances in test animals is comparable to human metabolism.

The uncertainty surrounding scientific evidence on risk, such as epidemiological and bioassay studies, leaves a void which OSHA must fill by making policy decisions. Three examples demonstrate this assertion. First, one basic policy decision which OSHA made during the 1970s was to consider strong evidence of cancer in laboratory animals as representing probability of cancer in humans.[8]

Another policy decision involves the concept of dose-response, which Steven Kelman explains as follows:

> In large enough doses, any chemical--table salt, water, milk--will harm the body....Conversely, below certain doses, humans will survive contact with cyanide gas or hemlock, and not be the worse for

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[7] Ibid.

[8] Ibid.

> wear. The dose of a chemical below which no toxic response is produced is called a "threshold" or "no-effect" dose.[9]

Again, during the 1970s, the agency adopted the position that no exposure level for carcinogens is entirely risk free except zero.[10] In regulatory language, this policy states:

> No determination will be made that a "threshold" or "no-effect" level of exposure can be established for a human population exposed to carcinogens in general, or to any specific substance, 29 CFR Sec. 1990.143(h) (1987).

A third example concerns a policy decision related to technology. To achieve technological compliance with health standards, OSHA favors the use of engineering controls rather than personal protective equipment, such as respirators. While business has vehemently criticized this policy decision because it results in high compliance costs, Kelman notes that this decision does have a sound factual basis from a regulatory perspective: "Once engineering controls have been installed, the problem is basically solved."[11] In contrast, while personal protective equipment is certainly less expensive for employers, employees often resist wearing it because it is uncomfortable and interferes with their job performance.

From these examples, one can conclude that a philosophy

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[9] Kelman, "Occupational Safety and Health," p. 237.

[10] Mendeloff, p. 63.

[11] Kelman, "Occupational Safety and Health," p. 251.

of maximum worker protection has guided OSHA's policy decisions. While organized labor certainly agrees with this philosophy, Kelman asserts that a more important contributing factor is the pro-protection ideology of the occupational safety and health profession.[12] Specifically, he discusses how occupational safety and health professionals are inculcated with pro-protection values in their training. When members of the profession become OSHA officials, they translate these values into policy. Furthermore, OSHA's organizational mission, which it derives from the Occupational Safety and Health Act, is clearly to protect workers. This sense of mission bolsters the acceptance of the pro-protection philosophy.[13]

Throughout the early history of the agency, business interests unsuccessfully argued against this philosophy on the basis of exorbitant compliance costs, as mentioned above. However, the current trend toward deregulation and the increased emphasis on fiscal restraint and cost considerations in government have provided an atmosphere in which policy makers give such arguments more credence.

For instance, cost-benefit analysis has received an increasing amount of attention. This type of analysis involves comparing the costs of a proposed regulatory activity with its potential benefits. Estimating the costs of a

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[12] Ibid., pp. 250-53.

[13] Ibid., p. 253.

proposed occupational health standard is not an easy task, but it can be accomplished with some degree of accuracy.

How does one measure the potential benefits? The comments of Dr. Morton Corn, former President Gerald Ford's Assistant Secretary for Occupational Safety and Health, are instructive:

> After arriving at OSHA, I engaged in an in-depth consideration of cost-benefit analysis, applying the methodology to the coke-oven standard....With the dose-response data at our disposal, various assumptions were used to ring in changes on different methodologies for estimating benefits. The range in values arrived at, based on the different assumptions, was so wide as to be virtually useless. The conclusion I reached after this exercise was that the methodology of cost-benefit analysis for disease and death effects is very preliminary, and one can almost derive any desired answer.[14]

The concept of cost-benefit analysis will be a recurring theme throughout this thesis.

In sum, the uncertainty which is inherent in the scientific aspects of risk assessment means that the procedure does not serve as an objective foundation for the regulation of occupational exposure to toxic substances. Rather, risk assessment involves many subjective decisions, which foster opportunities for political and economic considerations to

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[14] Charles Noble, *Liberalism at Work: The Rise and Fall of OSHA* (Philadelphia: Temple University Press, 1986), p. 113, citing Jacqueline Karnell Corn and Morton Corn, "The Myth and the Reality," in Robert F. Lanzillotti, ed., *Economic Effects of Government-Mandated Costs* (Gainesville: University Presses of Florida, 1977), p. 106.

influence the regulatory process at this fundamental level.

Because of the uncertainty surrounding the data used in risk assessment, the key to influencing the regulatory process is how groups present scientific information, with its economic implications, to policy makers. Although the presentation of information is critical to successful lobbying in any area of policy, groups attempting to influence a policy beset by scientific uncertainty enjoy even more opportunities to manipulate data to their advantage. Furthermore, those groups which succeed in manipulating data attempt to legitimate the manipulation with claims of scientific objectivity.

Accordingly, one must note that OSHA and NIOSH, the occupational safety and health research institute within the Department of Health and Human Services, rely chiefly upon data from external sources. This thesis will subsequently demonstrate that, as Jeffrey Berry asserts:

> A communication itself does not have to be overtly persuasive in nature; it can be technical information or a research report. It is the inferred intent of the communicator that is crucial to the definition [of lobbying].[15]

However, one must first gain a clear understanding of the legal framework for the regulation of occupational exposure to toxic substances since this framework defines the channels through which interests can convey information.

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[15] Jeffrey M. Berry, *Lobbying for the People* (Princeton, N.J.: Princeton University Press, 1977), p. 11.

## Promulgation of Standards

The Occupational Safety and Health Act provides three methods for setting health and safety standards, 29 U.S.C.A. Sec. 655 (1985).[16] First, within two years after the effective date of the Act, OSHA could promulgate any existing federal standard or national consensus standard as a final health or safety standard, 29 U.S.C.A. Sec. 655(a) (1985). The statute defines a national consensus standard as follows:

> ...any occupational safety and health standard or modification thereof which (1), has been adopted and promulgated by a nationally recognized standard-producing organization under procedures whereby it can be determined by the Secretary [of Labor] 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 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.A. Sec. 652(9) (1985).

At this point, one should recall from Chapter I the discussion of OSHA's adoption of standards established by ANSI and, more important, ACGIH, the association of industrial hygienists employed by the government. The ACGIH had established threshold limit values (TLVs) for many toxic

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[16] One should recall from Chapter I that Secretary of Labor's Order No. 12-71, 36 FR 8754 (1971), delegates the secretary's statutory responsibilities to OSHA. Thus, one should interpret references to the Secretary of Labor to mean OSHA.

substances. These limits are "the concentrations of a substance to which most workers can be exposed in an average workday without adverse effects."[17] In 1969 the federal government had adopted the TLVs for 400 substances as standards under the Walsh-Healey Act,[18] which regulates working conditions on public contracts, as discussed in Chapter I. On May 29, 1971, OSHA promulgated these TLVs.[19]

In addition, the Act outlines a permanent standard-setting process. For health standards, this process often begins with NIOSH. The Occupational Safety and Health Act created NIOSH to "develop and establish recommended occupational safety and health standards," 29 U.S.C.A. Sec. 671(c)(1) (1985). Furthermore, the Act states that, through NIOSH:

> The Secretary of Health and Human Services shall from time to time consult with the Secretary [of Labor] in order to develop specific plans for such research, demonstrations, and experiments as are necessary to produce criteria, including criteria identifying toxic substances, enabling the Secretary to meet his responsibility for the formulation of safety and health standards under this chapter, 29 U.S.C.A. Sec. 669(a)(2) (1985).

Specifically, NIOSH produces a criteria document containing its formal recommendations for a standard to

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[17] Norman J. Wood, "Environmental Law and Occupational Health," *Labor Law Journal* 27 (1976), p. 156.

[18] 34 FR 7946 (1969).

[19] 36 FR 10503 (1971).

fulfill these responsibilities.[20] More accessible to the layman is NIOSH's *Current Intelligence Bulletin* (CIB), an informal document "without regulatory significance."[21] Designed for public dissemination, the CIB for a toxic substance summarizes existing scientific research and NIOSH's recommendation, if one has been made.

OSHA may appoint an advisory committee to produce a draft for a recommended standard, 29 U.S.C.A. Sec. 656(b) (1985). The statute states that an advisory committee must include an equal number of representatives of business and labor, as well as other qualified individuals, 29 U.S.C.A. Sec. 656(b) (1985). All advisory committee meetings must be open to the public and the records of such meetings must also be available to the public, 29 U.S.C.A. Sec. 656(b) (1985).

The Act establishes a hybrid rule making procedure which allows both written comment and limited oral participation. OSHA must publish in the *Federal Register* any proposed rule which promulgates, modifies, or revokes a health or safety standard, 29 U.S.C.A. Sec. 655(b)(2) (1985). During a period of thirty days after publication, interested parties may submit written data or comment, 29 U.S.C.A. Sec. 655(b)(2) (1985), or file written objections and request a public hearing on those objections, 29 U.S.C.A. Sec. 655(b)(3)

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[20] Kelman, "Occupational Safety and Health," p. 244.

[21] National Institute of Occupational Safety and Health, *Formaldehyde: Evidence of Carcinogenicity*, Current Intelligence Bulletin 34, April 15, 1981.

(1985). OSHA must then publish a notice of the hearing in the *Federal Register*, 29 U.S.C.A. Sec. 655(b)(3) (1985).

Hearings provide an ideal forum in which interest groups can present their information. Kelman observes: "A good deal of the testimony is presented by organizations."[22] He cites frequent participation by the AFL-CIO, National Association of Manufacturers, trade associations for specific industries, and Ralph Nader's Health Research Group.[23]

Within sixty days after the expiration of the period for written comment or the completion of a hearing, OSHA must issue its final rule or determine that a rule should not be issued, 29 U.S.C.A. Sec. 655(b)(4) (1985). The rule may contain a provision delaying the effective date up to ninety days so that employers and employees can familiarize themselves with the new requirements, 29 U.S.C.A. Sec. 655(b)(4) (1985).

In the third method of promulgation, the statute allows interested parties to petition OSHA for the promulgation of an emergency temporary standard (ETS), 29 U.S.C.A. Sec. 655(c) (1985). Organized labor is generally the source of this type of petition.[24] An ETS takes effect immediately upon publication in the *Federal Register* if OSHA determines that employees are exposed to *grave danger* from which they can be

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[22] Kelman, "Occupational Safety and Health," p. 245.

[23] Ibid.

[24] Ibid., p. 244.

protected only through an ETS, 29 U.S.C.A. Sec. 655(c)(1) (1985). Publication of the ETS serves as the proposed rule for a permanent standard, which OSHA must promulgate within six months, 29 U.S.C.A. Sec. 655(c)(3) (1985).

The most important statutory requirement to which standards for toxic substances must conform is the following provision:

> The Secretary [of Labor], 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.A. Sec. 655(b)(5) (1985) [emphasis added].

Because it is the point at which all factors--scientific, technical, political, and economic--converge, this provision is the major source of contention over health standards. Should OSHA define *to the extent feasible* in terms of maximum worker protection, economics, or other guidelines?

As the final section of this chapter will demonstrate, judicial review is one method for dealing with the feasibility question. Accordingly, the courts often impose further constraints upon standard-setting. For example, the Supreme Court's invalidation of the benzene standard requires OSHA to demonstrate quantitatively that a toxic substance poses a significant risk of harm to employees.

Additional economic feasibility requirements have originated from presidential attempts to reform regulatory policy during the 1970s and 1980s. For example, the Regulatory Flexibility Act of 1980, Pub.L. 96-354, Sept. 19, 1980, 94 Stat. 1164, 5 U.S.C.A. Sec. 601 et seq. (1989), is the legislative version of one of President Jimmy Carter's attempts at regulatory reform.[25] According to this Act, OSHA must determine the extent of a standard's impact on small businesses, not-for-profit organizations, and governmental jurisdictions by preparing Regulatory Flexibility Analyses for both proposed and final rules, 5 U.S.C.A. Sec. 603, 604 (1989).

More important, President Ronald Reagan's Executive Order No. 12291 of 1981[26] requires review of all proposed and final rules by the Office of Management and Budget (OMB). The executive order states: "Regulatory action shall not be undertaken unless the potential benefits to society for the regulation outweigh the potential costs to society."[27] Consequently, for each proposed standard, OSHA must present to OMB a Regulatory Impact Analysis, which includes cost-benefit analysis. The executive order also states that an

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[25] U.S. Congress, Senate, *Judiciary Committee--Regulatory Flexibility Act of 1980, S. Rep. No. 96-878*, 96th Cong., 2nd sess., reprinted in *1980 U.S. Code Congressional & Administrative News* 4, p. 2788.

[26] 46 FR 13193 (1981).

[27] Exec. Order No. 12291, Sec. 2(b) (1981).

agency can combine the flexibility and impact analyses in order to ease its administrative burden.

A final requirement for health standards is imposed by the National Environmental Policy Act of 1969, Pub.L. 91-190, Jan. 1, 1970, 83 Stat. 852, as amended, 42 U.S.C.A. 4321 et seq. (1989), and related executive orders. According to these provisions, OSHA must determine how compliance with a health standard will affect the environment.

After reviewing OSHA's standard-setting process, one will probably agree with Kelman's succinct observation: "OSHA promulgates regulations after a process that is Byzantine in its complexity."[28]

## Overview of Standard-Setting Activity

Appendix II provides a chronology of standard-setting activity for toxic substances. From the chronology, one observes that the complexity of standard-setting results in slow promulgation. For example, although the ACGIH continued to lower its exposure levels,[29] OSHA did not modify the limits which it adopted from that organization in 1971 until January 1989. The agency published a final rule for air contaminants which lowered the permissible exposure limits (PELs) for 212 substances and established new PELs for 164 substances which the agency had not previously regulated.

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[28] Kelman, "Occupational Safety and Health," p. 244.

[29] Mendeloff, p. 107.

One can also observe from the appendix that the year 1978 provides an exception to the generally slow pace of promulgation. This development was the result of President Carter's appointment of Dr. Eula Bingham as Assistant Secretary for Occupational Safety and Health. Charles Noble comments about Bingham's leadership:

> In general, Carter appointees to the social regulatory agencies were sympathetic to the demands of organized labor and the consumer and environmental movements....Dr. Bingham fit this mold. A public health professor and activist, she was strongly committed to changing the agency's direction. For her there was still a crisis at the workplace, and OSHA had to confront it. Workers were faced, she maintained, with a "national environmental tragedy" on the job.[30]

Accordingly, Bingham advocated a new approach to expedite the pace of standard-setting, especially for health hazards. This technique involved the promulgation of broad, generic standards, whereas OSHA had previously issued standards only for specific toxic substances.

The culmination of the new approach was the promulgation of the Cancer Policy, 29 CFR Sec. 1990.101 et seq. (1987), in 1980. OSHA designed the Policy to resolve the general issues involved in the identification, classification, and regulation of potential carcinogens. As previously discussed, the Cancer Policy clarifies policy decisions concerning scientific and technological issues, such as threshold levels, extrapolation

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[30] Noble, p. 188.

from animals to humans, and engineering controls. It also includes model standards for potential carcinogens.

However, the Policy has never fulfilled its mission as envisioned by OSHA under Bingham's leadership. For instance, while the original version included references to the *lowest feasible level* of exposure, the Supreme Court's invalidation of the benzene standard forced the agency to remove this language.[31]

Furthermore, as previously mentioned, the advent of the Reagan Administration signaled an intensification of the trend toward deregulation. The Cancer Policy is only one example which demonstrates that OSHA provided no exception to this trend. Under the leadership of Thorne Auchter, the agency stayed the development of regulatory candidate and priority lists.[32] These lists were designed to serve as the key mechanisms by which OSHA could expedite the promulgation of standards for potential carcinogens.

Despite the problems of implementation associated with the Cancer Policy and other generic standards,[33] one cannot conclude that the agency has completely dispensed with the generic approach. For instance, to justify its activity on

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[31] At 46 FR 5881 (1981), OSHA stated: "No automatic setting of exposures at the lowest feasible level will occur."

[32] 47 FR 187 (1982) and 48 FR 243 (1983).

[33] The reader is referred to Appendices II and III for discussion of the hazard communication standard and the requirements for access to employee exposure and medical records.

air contaminants, the agency stated:

> OSHA has focused its past priorities on the development of detailed and broad regulations for some high priority substances....OSHA determined that it was necessary to modify this approach through the use of generic rulemaking, which would simultaneously cover many substances....Without a generic approach OSHA would not be able to provide the level of health protection required for many work situations.[34]

## Inspection, Enforcement, and the OSHRC

Although this thesis focuses upon the promulgation of health standards regulating toxic substances, it is relevant briefly to discuss the provisions of the Occupational Safety and Health Act which deal with inspection, enforcement, and initial adjudication. The Act states that, after "presenting appropriate credentials to the owner, operator, or agent in charge," OSHA has the authority to enter workplaces "without delay and at reasonable times," 29 U.S.C.A. Sec. 657(a)(1) (1985). Most inspections are routine; OSHA formulates a timetable of periodic inspections based upon various factors, including the agency's determination of how hazardous is a particular industrial sector or operation.[35] However, the statute also allows employees or their representatives to request in writing a special inspection if

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[34] 54 FR 2333 (1989).

[35] Len Brown, OSHA District Office, Allentown, PA, interview with author, April 5, 1989.

they believe "that a violation of a safety or health standard exists that threatens physical harm, or that an imminent danger exists," 29 U.S.C.A. Sec. 657(f)(1) (1985). The most important limitation upon OSHA's powers of inspection results from the Supreme Court's decision in *Marshall v. Barlow's Inc.*, 436 U.S. 307, 98 S.Ct. 1816, 56 L.Ed.2d 305 (1978), which holds that an employer can require the agency to obtain a search warrant in order to enter his establishment.

When an inspector determines that an employer is in violation of the law, the Act grants him the authority to issue a written citation, which must describe the nature of the particular violation and refer to the specific provision of the "chapter, standard, rule, regulation, or order alleged to have been violated," 29 U.S.C.A. Sec. 658(a) (1985). In addition, the citation must include "a reasonable time for the abatement of the violation," 29 U.S.C.A. Sec. 658(a) (1985).

Furthermore, "within a reasonable time after the termination of [the] inspection or investigation," OSHA must notify the employer by certified mail of the penalty to be assessed, 29 U.S.C.A. Sec. 659(a) (1985). An employer has fifteen working days from the receipt of this notice to inform OSHA of his intent to contest a citation and proposed penalty, 29 U.S.C.A. Sec. 659(a) (1985). If he does not contest, the citation and penalty become the final order of the Occupational Safety and Health Review Commission (OSHRC), 29 U.S.C.A. Sec. 659(a) (1985).

The OSHRC is an independent commission established by the Act for the initial adjudication of contested violations, 29 U.S.C.A. Sec. 661(a) (1985). It is composed of three members who are appointed by the president with Senate approval; members serve six-year terms, which are staggered, 29 U.S.C.A. Sec. 661(a) (b) (1985). The Commission appoints Sec. 661(a),(b) (1985). administrative law judges (ALJs) to hear proceedings, 29 U.S.C.A. Sec. 661(j) (1985). The report of an ALJ becomes the final order of the OSHRC within thirty days unless a Commission member requests that the Commission review it, 29 U.S.C.A. Sec. 661(j) (1985).

## Judicial Review of Standards

The Occupational Safety and Health Act provides for two types of judicial review. First, enforcement review occurs when "any person adversely affected or aggrieved on an order of the Commission" obtains review of that order by the court of appeals, 29 U.S.C.A. Sec. 660(a) (1985). OSHA may also obtain review or enforcement of a final order of the OSHRC in the court of appeals, 29 U.S.C.A. Sec. 660(b) (1985).

In addition, the Act also provides for preenforcement review of an ETS or permanent standard by the court of appeals:

> Any person who may be adversely affected by a standard issued under this section may at any time prior to the sixtieth day after such standard is promulgated file a petition challenging the validity of such standard with the United States

court of appeals, 29 U.S.C.A. Sec. 655(f) (1985).

The most important statutory requirement for preenforcement review is the substantial evidence test:

> The determinations of the Secretary [of Labor] shall be conclusive if supported by *substantial evidence in the record considered as a whole*, 29 U.S.C.A. Sec. 655(f) (1985) [emphasis added].

Preenforcement review is significant to this thesis because it deals with questions of feasibility. Accordingly, one must recall that the fundamental requirement with which standards for toxic substances must comply is *to the extent feasible*.

Appendix III summarizes various preenforcement review cases involving both emergency and permanent standards. This author asserts that three key cases have determined the framework of preenforcement review. These three cases dealt with permanent standards. One of these cases, *Industrial Union Department, AFL-CIO v. Hodgson*, 499 F.2d 467 (D.C. Cir. 1974), involved preenforcement review of the first permanent standard, asbestos. In examining this opinion, it is important to note that the court which reviewed this case had the difficult task of providing the first definition of the appropriate role of the judiciary in shaping occupational health policy.

The court focused upon how OSHA's hybrid rulemaking procedure and the uncertainty of the scientific data used in promulgation hinder the application of the Act's substantial

evidence requirement, which necessitates a strict standard of judicial review. The court determined that OSHA's standard-setting activity is both adjudicatory and legislative. The agency's resolution of the facts in the record comprises the adjudicatory component of promulgation, but at the same time, the uncertainty of the scientific data necessitates policy decisions which are legislative in nature. Thus, a court can review the adjudicatory aspects of promulgation by determining whether the record substantially supports OSHA's decisions, but it must recall that:

> ...some of the questions involved in the promulgation of these standards are *on the frontiers of scientific knowledge*, and consequently as to them insufficient data is presently available to make a fully informed factual determination. Decision making must in that circumstance depend to a greater extent upon policy judgments and less upon purely factual analysis, 499 F.2d 474 (D.C. Cir. 1974) [emphasis added].

Furthermore, the court continued:

> Thus, in addition to currently unresolved factual issues, the formulation of standards involves choices that by their nature require basic policy determinations rather than resolution of factual controversies. Judicial review of inherently legislative decisions of this sort is obviously an undertaking of different dimensions, 499 F.2d 475 (D.C. Cir. 1974).

Under these circumstances, a reviewing court must be flexible, 499 F.2d 475, 476 (D.C. Cir. 1974), but flexibility does not necessarily result in more lenient review. The court cited the following passage from one of its previous opinions:

> This exercise need be no less searching and strict in its weighing of whether the agency has performed in accordance with the Congressional purposes, but, because it is addressed to different materials, it inevitably varies from the adjudicatory model. The paramount objective is to see whether the agency, given an essentially legislative task to perform, has carried it out in a manner calculated to negate the dangers of arbitrariness and irrationality in the formulation of rules for general application in the future, *Automotive Parts & Accessories Ass'n v. Boyd*, 407 F.2d 330, 338 (D.C. Cir. 1968), cited at 499 F.2d 467 (D.C. Cir. 1974).

However, one can generally conclude that the court in *Hodgson* granted OSHA discretion in promulgation. The court upheld most of the asbestos requirements and stated:

> All of the challenged features of the standards appear to partake of an essentially legislative type of decision making by the Secretary [of Labor] in the performance of the broad delegation made to him by Congress. Had any one of these decisions been made in the first instance by Congress itself and embodied in the statute, its vulnerability to judicial scrutiny would have been dubious indeed. In this context, therefore, judicial review inevitably runs the risk of becoming arbitrary supervision and revision of the Secretary's efforts to effectuate the legislative purposes in an area where variant responses might each be legitimate in the sight of Congress, 499 F.2d 488 (D.C. Cir. 1974).

In addition to defining judicial review of standards, the court also discusses economic feasibility. It determines that "the factors entering into [OSHA's] conclusion could properly include problems of economic feasibility," 499 F.2d 477 (D.C. Cir. 1974). After examining the legislative history of the

Occupational Safety and Health Act, the court states that "it would comport with common usage to say that a standard that is prohibitively expensive is not 'feasible,'" 499 F.2d 477 (D.C. Cir. 1974). Thus, the court continues:

> Congress does not appear to have intended to protect employees by putting their employers out of business--either by requiring protective devices unavailable under existing technology or by making financial viability generally impossible, 499 F.2d 478 (D.C. Cir. 1974).

However, the court qualifies this discussion with the following statement:

> This qualification is not intended to provide a route by which recalcitrant employers or industries may avoid the reforms contemplated by the Act. Standards may be economically feasible even though, from the standpoint of employers, they are financially burdensome and affect profit margins adversely. Nor does the concept of economic feasibility necessarily guarantee the continued existence of individual employers. It would appear to be consistent with the purposes of the Act to envisage the economic demise of an employer who has lagged behind the rest of the industry in protecting the health and safety of employees and is consequently financially unable to comply with new standards as quickly as other employers, 499 F.2d 478 (D.C. Cir. 1974).

Again, just as in its discussion of judicial review, the court seems to grant OSHA discretion in the promulgation of standards.

In addition to *Hodgson*, two Supreme Court decisions are critical to preenforcement review of standards: *Industrial Union Department, AFL-CIO v. American Petroleum Institute*, 448

U.S. 607, 100 S.Ct. 2844, 65 L.Ed.2d 1010 (1980), or the *Benzene* decision, and *American Textile Manufacturers Institute v. Donovan*, 452 U.S. 490, 101 S.Ct. 2478, 69 L.Ed.2d 185 (1981), or the *Cotton Dust* case.

The *Benzene* decision was an appeal of *American Petroleum Institute v. OSHA*, 581 F.2d 493 (5th Cir. 1978), in which the court of appeals vacated OSHA's benzene standard. Regulating benzene as a carcinogen, the new standard would have reduced the PEL from 10 ppm to 1 ppm. Instead of basing its decision upon the feasibility language in the Occupational Safety and Health Act, the court relied upon "a hitherto little-regarded and unnoticed statutory provision"[36] from the definitions in the Act:

> 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, 29 U.S.C.A. Sec. 652(8) (1985) [emphasis added].

Hence, the court determined that this language imposes upon promulgation a reasonable relationship test,[37] according to which OSHA must balance its analysis of costs with a similar analysis of benefits. In other words, the court held that the agency must perform cost-benefit analysis. OSHA's

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[36] Charles Tiefer, "OSHA's Toxics Program Faces a Supreme Court Test," *Labor Law Journal* 30 (1979), p. 683.

[37] Ibid.

promulgation of the benzene standard failed this test because the agency merely stated in its rulemkaing:

> Having determined that the benefits of the proposed standard are *likely to be appreciable*, OSHA is not obligated to carry out further exercises toward more precise calculations of benefit which would not significantly clarify the ultimate decision.[38]

Drawing a parallel between the Consumer Product Safety Commission (CPSC) and OSHA, 581 F.2d 502 (5th Cir. 1978), the court of appeals concluded:

> Although the agency does not have to conduct an elaborate cost-benefit analysis, it does have to determine whether the benefits expected from the standard bear a reasonable relationship to the costs imposed by the standard, 581 F.2d 503 (5th Cir. 1978), citing *Aqua Slide 'N' Dive Corp. v. Consumer Product Safety Commission*, 569 F.2d 840, 842 (5th Cir. 1978).

The Supreme Court was extremely divided in the *Benzene* case. A plurality opinion was written by Justice Stevens, who was joined by Chief Justice Burger and Justice Stewart. Stevens stated that the plurality did not reach the issue of the lower court's cost-benefit requirement because OSHA had not determined the threshold question--whether or not the substance posed a *significant risk* of cancer:

> It is the Agency's responsibility to determine, in the first instance, what it considers to be a "significant" risk. Some risks are plainly acceptable and others are plainly unacceptable. If, for example, the odds are one in a billion

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[38] 43 FR 5941 (1978) [emphasis added].

> that a person will die from cancer by taking a drink of chlorinated water, the risk clearly could not be considered significant. On the other hand, if the odds are one in a thousand that regular inhalation of gasoline vapors that are 2% benzene will be fatal, a reasonable person might well consider the risk significant and take appropriate steps to decrease or eliminate it, 448 U.S. 655, 65 L.Ed.2d 1043 (1980).

Again, one must recall that OSHA had merely stated that the benefits of the standard were "likely to be appreciable."

Peter F. Stone argues that the plurality's rejection of "appreciable" risk stemmed from OSHA's lack of quantification.[39] However, the Court did qualify its comments about the quantification of significant risk by stating that "the requirement is not a mathematical straightjacket," 448 U.S. 655, 65 L.Ed.2d 1043 (1980). Furthermore, the Court continued: "OSHA is not required to support its findings that significant risk exists with anything approaching scientific certainty," 448 U.S. 656, 65 L.Ed.2d 1043 (1980). Citing *Hodgson*, the Court stated that a reviewing court must "give OSHA some leeway where its findings must be made on the frontiers of scientific knowledge," 448 U.S. 656, 65 L.Ed.2d 1043 (1980). Finally, the Court asserted:

> Thus, so long at they are supported by a body of reputable scientific thought, the Agency is free to use conservative assumptions in interpreting the data with

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[39] Peter F. Stone, "The Significant Risk Requirement in OSHA Regulation of Carcinogens: *Industrial Union Department, AFL-CIO v. American Petroleum Institute*," *Stanford Law Review* 33 (1981), p. 560.

> respect to carcinogens, risking error on the side of overprotection rather than underprotection, 448 U.S. 656-57, 65 L.Ed.2d 1043-44 (1980).

However, despite these reassurances by the plurality, one can conclude that the net effect of *Benzene* was the imposition of restraints upon OSHA's standard-setting process.

In order to demonstrate the diversity of views among the justices, it is relevant to discuss briefly the Court's other opinions. Two distinct concurring opinions were written by Justices Powell and Rehnquist. Powell would have upheld the lower court's cost-benefit requirement, while Rehnquist would have held that the *to the extent feasible* language of the Occupational Safety and Health Act is an unconstitutional delegation of legislative power to the executive branch. Finally, the dissenting opinion was written by Justice Marshall and joined by Justices Brennan, White and Blackmun. The dissenters would have upheld the standard because it met the substantial evidence test.

Unlike benzene, cotton dust is not a carcinogen, but exposure can cause a respiratory disease known as byssinosis, or "brown lung" disease. Although OSHA did not perform a cost-benefit analysis in its rulemaking, it did make threshold determinations which had been lacking in the rulemaking for benzene.[40] Specifically, OSHA found that exposure to cotton

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[40] Joseph E. Hadley, Jr. and Gerald L. Richman, "The Impact Of *Benzene* and *Cotton Dust*: Restraints On The Regulation Of Toxic Substances," *Administrative Law Review* 34 (1982), p. 65.

dust at the existing PEL posed a "significant health hazard to employees"[41] and that the new standard would significantly reduce the prevalence of byssinosis.[42] Thus, because the agency made these threshold determinations, the issue of cost-benefit analysis was ripe when the case later reached the Supreme Court.[43]

*Cotton Dust* was an appeal of *AFL-CIO v. Marshall*, 617 F.2d 636 (D.C. Cir. 1979), which affirmed the major requirements of the cotton dust standard for the textile industry. In sharp contrast to the Fifth Circuit's decision regarding benzene, the Court of Appeals for the District of Columbia (D.C.) Circuit held that the *reasonably necessary or appropriate* definition of a standard does not require a cost-benefit analysis for toxic substances. Rather, Congress intended the regulation of toxic substances to be subject only to limits of feasibility. The court stated:

> OSHA argues that the [Occupational Safety and Health Act] constrains the regulation of dangerous substances "only by limits of feasibility." We agree. We also find that no additional constraint is imposed by the Act's definition of a health or safety standard as "reasonably necessary or appropriate to provide safe or healthful employment." The language of the Act and the clear intention of Congress permit no other conclusion, 617 F.2d 663 (D.C. Cir. 1979).

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[41] Ibid., citing 43 FR 27350 (1978).

[42] Ibid., citing 43 FR 27359 (1978).

[43] Ibid., pp. 65-66.

While the Supreme Court's reasoning in *Benzene* differed from that of the Fifth Circuit, the Court in *Cotton Dust* affirmed the logic of the Court of Appeals for the D.C. Circuit. Justice Brennan wrote the majority opinion, joined by Justices White, Marshall, Blackmun, and Stevens. The majority relied upon the dictionary definition of *feasible* as "capable of being done," 452 U.S. 508-10, 69 L.Ed.2d 201-02 (1981). Joseph E. Hadley, Jr. and Gerald L. Richman assert that this technique "virtually decided the case for the five justice majority."[44] The Court stated:

> Thus, [the feasibility provision for toxic substances in the Occupational Safety and Health Act] directs [OSHA] to issue the standard that "most adequately assures...that no employee will suffer material impairment of health," limited only by the extent to which this is "capable of being done." In effect then, as the Court of Appeals held, Congress itself defined the basic relationship between costs and benefits, by placing the "benefit" of worker health above all other considerations save those making attainment of this "benefit" unachievable. Any standard based on a balancing of costs and benefits by [OSHA] that strikes a different balance than that struck by Congress would be inconsistent with the command set forth in [the feasibility provision]. *Thus, cost-benefit analysis by OSHA is not required by the statute because feasibility analysis is*, 452 U.S. 509, 69 L.Ed.2d 202 (1981) [emphasis added].

Furthermore, while the Court recognized that the *reasonably necessary or appropriate* definition could be

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[44] Ibid., p. 67.

interpreted to require cost-benefit analysis, it stated that it did not need to reach the issue for toxic substances:

> For even if it does, Congress specifically chose in [the feasibility provision] to impose separate and additional requirements for issuance of a subcategory of occupational safety and health standards dealing with toxic materials and harmful physical agents: it required that those standards be issued to prevent material impairment of health *to the extent feasible*. Congress could reasonably have concluded that *health* standards should be subject to different criteria than *safety* standards because of the special problems presented in regulating them, 452 U.S. 512, 69 L.Ed.2d 204 (1981).

In other words, the Court held that an interpretation of *reasonably necessary or appropriate* which imposed "an additional and overriding requirement of cost-benefit analysis" would "eviscerate" the promulgation of toxic substance standards according to their *to the extent feasible* requirement, 452 U.S. 513, 69 L.Ed.2d 204 (1981).

Finally, the Court concluded that "the legislative history of the [Occupational Safety and Health] Act, while concededly not crystal clear...demonstrates conclusively that Congress was fully aware that the Act would impose real and substantial costs of compliance on industry, and believed that such costs were part of the costs of doing business," 452 U.S. 514, 69 L.Ed.2d 205 (1981).

One can draw several conclusions from this discussion of judicial review of standards for toxic substances. First, *Hodgson* has remained the controlling precedent supporting

substantial evidence review. Beyond this foundation, however the circuit courts have developed several incompatible approaches for reviewing standards under conditions of factual uncertainty, as Howard Latin asserts.[45] Appendix III demonstrates that the Supreme Court has generally been reluctant to review preenforcement cases from the appellate courts. Accordingly, one can argue that the Supreme Court granted review in *Benzene* and *Cotton Dust* in order to bring consistency to this area of the law.

However, it is important to note that some analysts, such as Neil Sullivan, assert that *Benzene* and *Cotton Dust* have resulted in more confusion rather than clarity.[46] The diversity of opinions in *Benzene* certainly supports those analysts who contend that the decision contributes to regulatory confusion. As Sullivan asserts: "The Court decided five to four to invalidate the standard, but the majority included four separate opinions, three of which were significantly distinct."[47]

Moreover, with respect to *Cotton Dust*, Sullivan argues

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[45] Howard Latin, "The Feasibility Of Occupational Health Standards: An Essay On Legal Decisionmaking Under Uncertainty," *Northwestern University Law Review* 78 (1983), pp. 584-85.

[46] Neil Sullivan, "The Benzene Decision: A Contribution To Regulatory Confusion," *Administrative Law Review* 33 (1981), pp. 351-65; Sullivan, "The Cotton Dust Decision: The Confusion Continues," *Administrative Law Review* 34 (1982), pp. 483-94.

[47] Sullivan, "The Benzene Decision," p. 354.

that the Court's reasoning is "far too tenuous to survive as a policy, and thus the problems stemming from the *Benzene* decision will continue."[48] He asserts that *Cotton Dust* does not necessarily preclude cost-benefit analysis as part of a threshold determination of the significance of a hazard.[49] Hadley and Richman agree with this assertion.[50]

Indeed, Hadley and Richman note that Reagan's Executive Order No. 12291, as previously discussed, requires cost-benefit analysis regardless of *Benzene*.[51] Significantly, the Court agreed to review the *Cotton Dust* case on the issue of cost-benefit analysis before the executive order was issued.[52] Sullivan expounds upon these points in a discussion of the politics of *feasibility*:

> The political nature of "feasibility" was demonstrated incontrovertibly when the Reagan administration attempted to persuade the Court to remand the regulation to OSHA for further consideration. The purpose of the reconsideration would have been to apply the very cost-benefit analysis that the agency had argued during the Carter administration it was not obligated to

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[48] Sullivan, "The Cotton Dust Decision," p. 484.

[49] Ibid., p. 492.

[50] Hadley and Richman, "The Impact Of *Benzene* and *Cotton Dust*," p. 69.

[51] Ibid., pp. 64-65.

[52] Ibid.

conduct.[53]

Moreover, Sullivan adeptly summarizes the problems inherent in judicial review of *feasibility* as a political concept:

> Administrations have been able to read meaning into "feasibility" by deciding whether the political support of business or labor is more important. The courts lack such a point of reference...Attempts by the courts to determine what the law is through the customary methods have proven unsuccessful as demonstrated by several courts supporting each interpretation based on a reading of the same legislative history...."feasibility" is a thinly veiled political compromise which fails to resolve the competing claims of business and labor.[54]

In accordance with his political definition of *feasibility*, Sullivan advocates returning the conflict to the legislature. It is important to recognize that this view corresponds to Justice Rehnquist's concurring opinion in *Benzene*, as previously mentioned, and his dissent in *Cotton Dust*. Sullivan supports this view with the following rationale:

> Relative to the other branches of government, the legislative body is more accountable to public control. By virtue of its size, it is closest to the people, its procedures are the most open to input, and its incentives can be directly

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[53] Sullivan, "The Cotton Dust Decision," p. 487. At Ibid., footnote 27, Sullivan notes that the Reagan administration's interpretation contrasted with that of the three previous administrations which had implemented the Occupational Safety and Health Act.

[54] Ibid., p. 488.

plied by interest groups.[55]

Clearly, Sullivan's analysis as a potential solution to the problem of uncertainty in occupational exposure to toxic substances merits further consideration in the concluding chapter of this thesis.

A final point in the discussion of judicial review of standards for toxic substances is the volume and complexity of the record in preenforcement cases. Reviewing courts often express frustration concerning this point. For example, the *Hodgson* court stated that "the record, examined closely in relation to the relevant concerns of the Act, leaves nagging questions--*even for the inexpert observer*--as to the reason and rationale for the Secretary's particular choices," 499 F.2d 488 (D.C. Cir. 1974) [emphasis added]. Similarly, in its review of the cotton dust standard, the Court of Appeals for the District of Columbia Circuit remarked: "Our task on review has not been easy. The record is massive and unwieldy," 617 F.2d 676 (D.C. Cir. 1979). In a corresponding footnote, the court chastised OSHA for failing to present its record in a more organized fashion, 617 F.2d 676 at footnote 29 (D.C. Cir. 1979).

In sum, these comments by the courts and the arguments concerning the political nature of *feasibility* demonstrate that judicial review is not a panacea for the problem of

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[55] Ibid., p. 493.

uncertainty in OSHA's regulation of exposure to toxic substances.

# CHAPTER III

## OSHA'S REGULATION OF FORMALDEHYDE

...delay and doctrine should not allow OSHA to sidestep the serious questions posed by employee exposure to formaldehyde, nor avoid its obligation to adequately explain its actions.[1]

*UAW v. Donovan*

### The Ubiquitous Chemical

Represented by the chemical symbol HCHO, *formaldehyde* is the simplest member of the class of chemicals known as aldehydes.[2] Found in all living things, this compound is often referred to as "nature's building block" because of its importance in the synthesis of DNA.[3] The natural occurrence of formaldehyde is matched by its usefulness to man. Hence,

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[1] 590 F.Supp. 752 (D.C.D.C. 1984).

[2] 52 FR 46171 (1987).

[3] Rich Christianson and Barbara Garet, "Formaldehyde: OSHA's Cancer Labeling Provision Overturned...For Now," *Wood & Wood Products*, April 1988, p. 48.

formaldehyde is often referred to as "ubiquitous."[4] Formaldehyde is a gas at room temperature, but the term is also used to describe various mixtures of formaldehyde, water, and alcohol.[5]

Ranked 24th in production volume in the U.S., formaldehyde is a major industrial chemical.[6] The chemical properties of formaldehyde make it a useful preservative. Two familiar uses of formaldehyde as a preservative occur in the biology lab and in the embalming process. Because these uses of the chemical are so common, one might overlook the direct occupational exposure resulting from them. In addition, because it possesses a high degree of chemical reactivity, formaldehyde is often used in the production of other industrial chemicals.

Furthermore, formaldehyde is combined with other substances to produce compounds and resins which are utilized in various types of manufacturing processes. For example, urea-formaldehyde resins are used as glue in the manufacture of particleboard and plywood and are mixed with sand to create foundry molds. It is also significant to note that consumer complaints about health effects resulting from the urea-formaldehyde foam insulation process attracted publicity in

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[4] For example, the reader is referred to "A letup in the drive to regulate formaldehyde," *Business Week*, October 12, 1981, p. 88.

[5] 52 FR 46171 (1987).

[6] 52 FR 46172 (1987).

the early 1980s.

This author's discovery that occupational exposure to formaldehyde occurs in the apparel industry provided the impetus for this thesis, chiefly because the author could not imagine what purpose formaldehyde could serve in the manufacture of clothing. Subsequently, this author was surprised to learn that textiles are treated with formaldehyde resins to impart wrinkle-resistancy.

In the apparel industry, occupational exposure to formaldehyde occurs when airborne formaldehyde offgasses from treated cloth during the manufacturing process.[7] When the formaldehyde resins which are used to treat cloth are originally produced, formaldehyde is transformed into other chemicals. However, this chemical reaction is reversible, and the manufacturing process causes the compound to be transformed once again into formaldehyde. Jan Greene describes exposure in the apparel industry as follows:

> In the garment industries, the textile mill workers are not at greatest risk. Formaldehyde in its liquid form is applied to the fabric by machine, and few workers are needed to run the required equipment. The chemical vapor tends to come out when the fabric is cut and sewn together, and the exposure is often greatest when piles of treated cloth used in apparel manufacturing are left to sit in a warm place and are then moved.[8]

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[7] 52 FR 46173 (1987).

[8] Jan Greene, "Formaldehyde: Debating Rules And Risks," *Daily News Record*, June 19, 1985, p. 6.

Because wrinkle-resistancy can be imparted to textiles with a relatively small amount of formaldehyde, textile treating uses only two percent of total formaldehyde consumption.[9] However, apparel manufacture is the sixth largest industry sector in the U.S., and between 60 and 85 percent of all apparel fabric is treated.[10] Therefore, one can conclude that the apparel industry presents an interesting case study in the regulation of toxic substances: a large number of workers are exposed to formaldehyde at relatively low levels. As the final section of this chapter will demonstrate, this type of situation poses significant challenges for risk assessment.

Several types of health effects can result from occupational exposure to formaldehyde. Most important, OSHA regulates formaldehyde as an occupational carcinogen.[11] Reported in 1979, the preliminary results of a study conducted by Battelle Columbus Laboratories for the Chemical Industry Institute of Toxicology (CIIT) provided the first evidence of formaldehyde's carcinogenicity. The CIIT study was a bioassay, or animal study, in which rats developed nasal cancer from the inhalation of formaldehyde. In its rulemaking, OSHA used this rat data as the primary basis of

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[9] 52 FR 46173 (1987).

[10] Ibid.

[11] Ibid.

its quantitative estimates of cancer risk.[12]

The inhalation of airborne formaldehyde can cause irritation of the eyes, nose, and throat.[13] Dermal contact with formaldehyde can cause skin irritation.[14] Dermal sensitization, or the development of allergic reactions, frequently occurs.[15]

## History of Formaldehyde Regulation

Although the debate over formaldehyde's carcinogenicity is relatively recent, the irritant effects of the chemical have subjected it to scrutiny for years. For instance, the American Conference of Governmental Industrial Hygienists (ACGIH) has determined exposure limits for formaldehyde since 1946.[16]

OSHA based its original formaldehyde exposure limits upon standards developed by the American National Standards Institute (ANSI) to address formaldehyde's irritant effects.[17] The agency adopted ANSI's limits as its general industry standard in 1971 in accordance with the Occupational Safety and Health Act's provision for national consensus standards,

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[12] 52 FR 46211 (1987).

[13] 52 FR 46173 (1987).

[14] Ibid.

[15] Ibid.

[16] 52 FR 46169 (1987).

[17] Ibid.

29 U.S.C.A. Sec. 655(a) (1985).

The general industry standard included an eight-hour time weighted average (TWA) exposure limit of three parts of formaldehyde per million parts of air (ppm).[18] In addition, employee exposure could not exceed five ppm at any time during an eight-hour shift, except for a maximum period of 30 minutes during which the "acceptable maximum peak" could not exceed 10 ppm.[19]

In accordance with the framework outlined in Chapter II, the National Institute for Occupational Safety and Health (NIOSH) provided OSHA with a recommendation for lowering formaldehyde exposure limits in December 1976. Again, this recommendation was based upon the chemical's irritant effects. Finding that complaints from workers about eye, skin, and respiratory irritation increased when exposure concentrations exceeded 1 ppm, NIOSH recommended that OSHA reduce the permissible exposure limit (PEL) to 1 ppm for a 30-minute period.[20]

As previously discussed, the CIIT released its preliminary findings of carcinogenicity in 1979. A separate bioassay conducted at New York University (NYU) corroborated these findings.

It is interesting to observe that the CIIT study was

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[18] Ibid.

[19] Ibid.

[20] Ibid.

sponsored by the chemical industry. However, formaldehyde producers also organized the Formaldehyde Institute in 1979 "to address the scientific, technical, business, legal and regulatory issues confronting the industry."[21] The Formaldehyde Institute charged that the CIIT and NYU bioassays should not serve as the sole basis for regulating formaldehyde as a carcinogen.[22] Rather, the Institute asserted, regulators should wait until a human epidemiological study could be completed.[23]

As discussed in Chapter II, OSHA's Cancer Policy stated that animal evidence could be sufficient for regulation as a carcinogen. Thus, the CIIT and NYU studies complicated the regulatory environment for OSHA. Although the agency had been planning some sort of action on formaldehyde, it was now faced with the dilemma of whether to regulate the chemical as an irritant or carcinogen.

This debate coincided with the transition from the Carter to the Reagan administration. As discussed in Chapter II, the change in presidential administration marked a fundamental ideological shift toward deregulatory policy. This shift appeared even more dramatic because of the activism of

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[21] Rich Christianson, "CIIT Sheds New Light On Formaldehyde's Health Effects," *Wood & Wood Products*, April 1988, p. 55.

[22] Marjorie Sun, "EPA May Be Redefining Toxic Substances," *Science* 214 (1981), pp. 525-26.

[23] Ibid.

President Carter's head of OSHA, Eula Bingham.

Under Bingham's leadership, OSHA took several actions upon receipt of the preliminary CIIT findings.[24] The agency joined ongoing formaldehyde studies by the Interagency Regulatory Liaison Group (IRLG) and the Federal Panel on Formaldehyde.[25] In addition, OSHA agreed to cosponsor a NIOSH *Current Intelligence Bulletin* (CIB) on formaldehyde's carcinogenicity.

From Chapter II, the purpose of a CIB is to review existing scientific research on a given substance for public dissemination. The document does not constitute a formal recommendation[26] or have regulatory significance if issued solely by NIOSH. However, prior to formaldehyde, OSHA had agreed to cosponsor certain CIBs with NIOSH; such documents

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[24] Nicholas Ashford, C. William Ryan, and Charles C. Caldart, "A Hard Look At Federal Regulation Of Formaldehyde: A Departure From Reasoned Decisionmaking," *Harvard Environmental Law Review* 7 (1983), p. 346.

[25] Other federal regulatory agencies in addition to OSHA were concerned with formaldehyde's health effects. For instance, the Toxic Substances Control Act, Pub.L. 94-469, October 11, 1976, 90 Stat. 2003, as amended, 15 U.S.C.A. Sec. 2601 et. seq. (1989), grants the Environmental Protection Agency (EPA) broad authority to regulate toxic substances. Furthermore, the Consumer Product Safety Commission (CPSC) was also interested in formaldehyde because of complaints from consumers about urea-formaldehyde foam insulation.

[26] Here the reader should recall that NIOSH had issued a formal recommendation to regulate formaldehyde as an irritant in 1976.

then had regulatory significance.[27]

Bingham cosigned a pre-publication version of the formaldehyde CIB, which was available to the public in December 1980.[28] NIOSH and OSHA stated that formaldehyde be regarded as a potential occupational carcinogen. However, when Thorne Auchter became Assistant Secretary for Occupational Safety and Health in March 1981, he withdrew OSHA's sponsorship of the CIB.[29] NIOSH published the CIB on its own in April 1981.[30]

Shortly thereafter, OSHA proposed to fire Dr. Peter Infante, director of the agency's Office of Carcinogen Identification and Classification. Infante was charged with misrepresenting OSHA's official position on formaldehyde's carcinogenicity. The controversy began in May 1981 when Infante wrote a letter to John Higginson, director of the International Agency for Research on Cancer (IARC), which is part of the World Health Organization. In this letter, Infante expressed his dismay at the IARC's recent decision that there was insufficient evidence to classify formaldehyde

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[27] U.S. Congress, House of Representatives, *Hearing before the Subcommittee on Investigations and Oversight of the Committee on Science and Technology*, 97th Cong., 1st sess., July 16, 1981, pp. 57-59. Hereafter cited as *Gore Hearings, 1981*.

[28] Ashford, Ryan, and Caldart, "A Hard Look," p. 347.

[29] Ibid.

[30] National Institute of Occupational Safety and Health, *Formaldehyde: Evidence of Carcinogenicity*, Current Intelligence Bulletin 34, April 15, 1981, p. 1.

as a carcinogen in animals. Infante wrote the letter on official OSHA stationery and enclosed a copy of the CIB on formaldehyde.

In a letter to Auchter on May 28, 1981, Higginson criticized Infante's action as "an attempt by a United States Regulatory Agency to influence the decisions of the [IARC]."[31] More important, on June 2, 1981 S. John Byington, an attorney for the Formaldehyde Institute, sent a letter to Auchter's special assistant, Mark Cowan, to protest Infante's action. Byington's correspondence began with the following question:

> How do you control members of the bureaucracy who seem to be operating freely within and without government and who seem to have made a decision and now are advocating a position rather than processing information for the appropriate policy decisionmakers?[32]

Both the Infante situation and the CIB controversy were examined by a House subcommittee chaired by Representative Albert Gore (D-Tennessee) in July 1981. In response to another subcommittee member's assertion that such congressional oversight "might have a chilling effect on the Federal Government," Gore stated:

> If there is a chilling effect against which we must guard today, it is the threat to the integrity of American science. The message that otherwise would be sent to all Federal scientists is clear: those who try to do their jobs to protect the health of the American

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[31] *Gore Hearings, 1981*, p. 30.

[32] Ibid., p. 22.

> people will instead lose their jobs to protect industry profits.[33]

When Gore questioned Auchter about whether the decision to withdraw OSHA's sponsorship of the CIB originated with the Formaldehyde Institute, Auchter replied:

> ...you need to understand the management system in the agency and the policy reviews we have been undertaking since I was sworn in. Our approach is pretty basic to management, that is, when we have a subject for a policy decision, we get the appropriate parties involved, we research that subject; we analyze the data. We put that data down on paper, sit around and discuss it and I make the decision.[34]

Gore then examined Cowan about the meeting which he held with the Formaldehyde Institute. At this meeting, representatives of the Institute allegedly expressed the view that the CIB was based upon insufficient data. Gore concluded:

> You had two lawyers representing the folks who manufacture formaldehyde talking with a lawyer new to OSHA about the scientific evidence on formaldehyde. And this formed the basis of your judgment that the scientific data compiled by the distinguished team of scientists from throughout the Federal Government was not to be relied upon.[35]

An illustrative exchange concerning the distinction between scientific and policy decisions ensued when Gore asked Cowan and Auchter whether they personally lacked confidence

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[33] Ibid., p. 2.

[34] Ibid., p. 59.

[35] Ibid.

in the data upon which the CIB was based. Cowan replied: "I personally am not able to judge that information, as you know that I am not a scientist. Others do."[36] Auchter answered: "For regulatory purposes, yes...As a *policy decision*, I do."[37] Gore continued by asking Auchter to identify the OSHA scientists whom he had consulted to draw this conclusion. Auchter replied that he had never asked that question "for regulatory purposes."[38]

Relating the CIB controversy to Infante, Gore told Auchter:

> In the [personnel action] letter to Dr. Infante...the first charge is that Dr. Infante did not properly reflect OSHA's lack of confidence on the part of the agency in the data on which the CIB was based. Now I can't find anyone other than the Formaldehyde Institute and you and Mr. Cowan who lack confidence in the data on which...the CIB was based.[39]

Auchter replied that he was not required to comment upon the proposal to fire Infante because it was part of his discretion as the deciding official.[40]

Gore concluded the hearing by stating:

> In my opinion, it's clear what happened. The Formaldehyde Institute wanted this guy out of the Government and the only

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[36] Ibid., p. 60.

[37] Ibid [emphasis added].

[38] Ibid., p. 61.

[39] Ibid.

[40] Ibid.

> charge they could come up with was that he used the OSHA stationery.[41]

In August 1981, Auchter informed Infante that he could retain his position at OSHA.[42] One can assert that congressional oversight accomplished its purpose in this instance.

However, the events discussed above did not fundamentally alter OSHA's newly adopted deregulatory philosophy. In October 1981, the United Auto Workers (UAW), which represented foundry workers exposed to formaldehyde, and 13 other unions petitioned OSHA to issue an emergency temporary standard (ETS) in light of the new evidence of formaldehyde's carcinogenicity. OSHA denied the petition in January 1982. Auchter's letter to Howard Young, director of the UAW's Social Security Department, provided the following rationale for the decision:

> Section 6(c) of the Occupational Safety and Health Act allows the Secretary to promulgate an emergency temporary standard without rulemaking only if he determines that (a) employees are exposed to a grave danger from exposure to toxic agents or from new hazards, and (b) that such emergency standard is necessary to protect employees from such danger. I believe that emergency temporary standards are appropriate only in response to extraordinary conditions which result in the exposure of employees to a grave danger during the course of

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[41] Ibid., p. 82.

[42] Clyde H. Farnsworth, "Reinstatement at OSHA," *The New York Times*, August 10, 1981, p. D2.

their employment.[43]

In other words, Auchter felt that the CIIT and NYU studies did not prove that workers exposed to formaldehyde were in grave danger.[44]

Organized labor filed suit in district court to compel OSHA to issue the ETS. In *UAW v. Donovan*, 590 F.Supp. 747 (D.C.D.C. 1984),[45] the district court required OSHA to reconsider its denial of the ETS and its decision to delay permanent rulemaking for formaldehyde.

The court found that a narrow standard of review was appropriate for two reasons. First, the court stated that the case involved an agency's decision *not* to act, *UAW v. Donovan*, 590 F.Supp. 747 (D.C.D.C. 1984). Accordingly, in their analysis of formaldehyde regulation, Nicholas Ashford, C. William Ryan, and Charles C. Caldart note the judiciary's traditional deference to agencies which have chosen not to act.[46] Furthermore, the court emphasized the special character of summary procedures such as the ETS, *UAW v. Donovan*, 590 F.Supp. 749, 750 (D.C.D.C. 1984). In sum, the court reached the following conclusion on the appropriate standard of

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[43] Letter from Thorne Auchter to Howard Young (January 29, 1982), cited in Ashford, Ryan, and Caldart, "A Hard Look," p. 348.

[44] Ashford, Ryan, and Caldart, "A Hard Look," pp. 348-49.

[45] As discussed in Appendix III, the case was later transferred to the court of appeals on procedural grounds; the court of appeals upheld the order of the district court.

[46] Ashford, Ryan, and Caldart, "A Hard Look," p. 304.

review:

> The theme of these cases is one of deference and restraint. OSHA may issue an ETS only in "extraordinary circumstances." Judicial review of an OSHA decision not to regulate is "extremely narrow." Reversal of OSHA's decision here thus requires the exceptional to exist from both "substantive" and "judicial review" perspectives, *UAW v. Donovan*, 590 F.Supp. 751 (D.C.D.C. 1984).

However, the court also stated that the narrow standard of review did not exempt OSHA from "reasoned explanation" of its action, *UAW v. Donovan*, 590 F.Supp. 751 (D.C.D.C. 1984).

The court continued that, even before the narrow standard of review could be applied, the appropriate threshold question involved "whether the Court, some three years after the petition was filed, should even engage in review," given the temporal nature of an ETS, *UAW v. Donovan*, 590 F.Supp. 751 (D.C.D.C. 1984). The court stated:

> ...litigation--particularly *this* litigation--is historical in nature; judicial review is based on "the record" before the agency *at the time* of its decision. The UAW filed its petition in 1981. OSHA denied it in 1982. This is 1984....A judicially-declared "emergency" standard would be in effect from June to December 1984, yet be based on a record as it (may have) existed as of January 1982, *UAW v. Donovan*, 590 F.Supp. 752 (D.C.D.C. 1984).

The court then cited several scientific and regulatory developments which had subsequently occurred in relationship to formaldehyde and concluded that remanding the case to OSHA was appropriate:

> Surely the statutory purpose [of "best available evidence" in the Occupational Safety and Health Act] is better served by initial agency review of all *current* data and analyses, rather than by judicial review of a record as it existed over two years ago, *UAW v. Donovan*, 590 F.Supp. 753 (D.C.D.C. 1984).

Finally, the court also concluded that remand was appropriate because of the inadequacy of OSHA's explanation for its denial. The court charged that OSHA's denial was "no model of agency explanation," *UAW v. Donovan*, 590 F.Supp. 753 (D.C.D.C. 1984). The court then stated:

> Although the agency should not be required to reinvent the wheel whenever it denies an ETS petition, it must at minimum meet the requirements of the "fundamental requirement of reasoned explanation," including adequately "informing the aggrieved person of the grounds of the administrative action," *UAW v. Donovan*, 590 F.Supp. 753 (D.C.D.C. 1984), citing *Matlovich v. Secretary of the Air Force*, 591 F.2d 852, 857 (D.C. Cir. 1978).

In January 1985, OSHA once again denied the ETS petition, but also announced that it would hold public meetings in February 1985 to gather information on whether permanent rulemaking should commence.[47] On the basis of these hearings, the agency decided in April 1985 to proceed with permanent rulemaking and published a proposed rule on December 10, 1985.[48] Unions charged that OSHA already had sufficient information and was simply employing "delaying tactics"

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[47] 52 FR 46171 (1987).

[48] Ibid.

throughout this period.[49]

The proposed rule included two regulatory options--carcinogen and irritant. The stricter carcinogen option proposed a PEL of 1 ppm and also included various other protections. The less protective irritant option simply proposed to lower the PEL to 1.5 ppm. The economic implications of this choice were significant. One estimate projected capital costs of $57.8 million and annual costs of $28.3 million for regulation as a carcinogen, while the costs associated with regulation as an irritant were $38.9 million and $17.0 million, respectively.[50]

Organized labor sharply attacked the two-option proposal. For example, UAW President Owen Bieber stated:

> After five years of delay, OSHA has finally offered an outdated, inadequate proposal which would actually allow some employers to increase formaldehyde exposures on the job....It's about time that OSHA has come out of hiding and produced a formaldehyde proposal for public discussion, but OSHA's proposal is so half-hearted that we question the sincerity of the agency. Secretary of Labor William Brock has promised some changes at OSHA. We are still waiting...[51]

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[49] Vicky Cahan and Paula Dwyer, "Formaldehyde limits: A continuing battle," *Chemical Week*, April 17, 1985, pp. 11, 13.

[50] "Benzene, Formaldehyde: Workplace exposure limits proposed," *Chemical & Engineering News*, December 9, 1985, p. 4.

[51] Richard M. Kendall, "Health Standards Draw Criticism, Charges of OMB Interference," *Occupational Hazards*, May 1986, pp. 64-65.

Early in 1986, the National Cancer Institute (NCI) released the results of a long-awaited epidemiological study on formaldehyde. The study immediately sparked a new controversy over formaldehyde.

The NCI study of more than 26,000 industrial workers found "little evidence that exposure to formaldehyde in the workplace is associated with cancer deaths."[52] NCI reported "a 32 percent 'excess' in lung cancer deaths among workers after 20 years from their first exposure" and found "higher than expected rates of upper-respiratory cancer."[53] However, the NCI concluded that "these increased cancers could not be linked to formaldehyde because workers with longer and heavier exposure did not show higher cancer rates than those with lesser exposure."[54]

The study drew criticism from organized labor not only for its conclusions, but also for the involvement of industry officials from the Formaldehyde Institute and the DuPont and Monsanto chemical companies. When the results were released, NCI's Aaron Blair, the director of the study, justified the collaboration with industry in order to get better information from the companies but denied industry influence of the

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[52] National Cancer Institute, *Cancer and Formaldehyde: Mortality Among Industrial Workers*, Cancer Facts, March 1986, p. 1.

[53] Peter Perl, "Cancer-Link Conclusions In Dispute," *The Washington Post*, March 3, 1986, p. A1.

[54] Ibid.

results.[55]

The NCI study became the focus of the rulemaking hearings in May 1986[56] and prompted a congressional investigation in July 1986. A House subcommittee chaired by Representative John D. Dingell (D-Michigan) questioned Blair and other NCI officials about the relationship between the study's optimistic conclusions and industry's participation in the study. Representative Ron Wyden (D-Oregon) criticized Blair for briefing the Formaldehyde Institute on the study in September 1985 while failing to respond to requests for information from officials at OSHA and EPA.[57] Blair admitted that he had reported the findings to the Institute because they were assisting in the study.[58] Furthermore, Dingell questioned Blair and other officials about a provision in the study protocol which stated that industry representatives had to agree to any technical changes in the design of the study.[59]

Finally, when OSHA closed the rulemaking record for formaldehyde in January 1987, it consisted of approximately

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[55] "Formaldehyde Study Sees Little Cancer-Death Link," *The Wall Street Journal*, March 4, 1986, p. 10.

[56] 52 FR 46171 (1987).

[57] U.S. Congress, House of Representatives, *Hearing before the Subcommittee on Investigations and Oversight of the Committee on Energy and Commerce*, 99th Cong., 2nd sess., July 28, 1986, pp. 77-78.

[58] Ibid., p. 78.

[59] Susan Okie, "Formaldehyde Study Criticized," *The Washington Post*, July 29, 1986, p. A13.

30,000 pages of testimony and comments.[60]

## The Final Standard

Relying upon the CIIT study as the primary basis for its risk assessment, OSHA's final standard regulates formaldehyde as an occupational carcinogen, as previously discussed. The standard has lowered the PEL for formaldehyde from 3 ppm to 1 ppm as an eight-hour TWA.[61] In other words, an employee cannot be exposed to more than 1 ppm averaged over an eight-hour work shift. In addition, the standard establishes a short-term exposure limit (STEL) of 2 ppm for any 15-minute period.[62] Furthermore, OSHA has adopted an "action level" of 0.5 ppm for an eight-hour period.[63] "If the exposure level is maintained below the STEL and the action level, employers may discontinue exposure monitoring and certain employee training."[64] The standard contains various other protective provisions as well.[65]

Even before the revised standard was published in the

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[60] 52 FR 46171 (1987).

[61] The reader should recall from previous discussion that TWA refers to a time-weighted average.

[62] Henry Weinstein, "Formaldehyde Exposure Levels Cut," *The Los Angeles Times*, November 21, 1987, p. 34.

[63] Ibid.

[64] U.S. Department of Labor, *U.S. Department of Labor Program Highlights, Fact Sheet No. OSHA-87-27.*

[65] The reader is referred to 52 FR 46168 (1987) for a summary of the standard.

*Federal Register* on December 4, 1987, industry and organized labor had filed suits for preenforcement review.[66] Peter J. Sheridan offers the following description of the "race to the courthouse":

> The formaldehyde standard was posted in the Federal Register at noon on December 2, 1987. Moments later, the Formaldehyde Institute (FI) was filing its suit in the U.S. Court of Appeals for the Fifth Circuit in New Orleans. Simultaneously, in Washington, D.C., the [UAW] were filing their suit in the U.S. Court of Appeals for the District of Columbia Circuit. As fast as FI and UAW arrived at the courthouses, they lagged a minute behind the Amalgamated Clothing and Textile Workers Union and the International Ladies Garment Workers Union who had filed a separate suit in the D.C. appellate court. As it turned out, the two unions were a minute early, and, therefore, had to re-file.[67]

Sheridan explains that the unions often "race to the courthouse" in Washington under the assumption that that circuit's court of appeals is liberal.[68] Similarly, industry hurries toward the Court of Appeals for the Fifth Circuit in

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[66] A relevant political cartoon includes personifications of the Formaldehyde Institute, UAW, and the Amalgamated Clothing and Textile Workers Union (ACTWU) as sprinters and a judge holding a stopwatch. The judge comments: "Another race to the court house over a health standard...Talk about deja-vu!" (Illustration by John Beukemann, accompanying Peter J. Sheridan, "Will OSHA's Formaldehyde Standard Withstand Court Challenges?" *Occupational Hazards*, April 1988, p. 50.

[67] Sheridan, "Will OSHA's Formaldehyde Standard," p. 51.

[68] Ibid.

New Orleans because it is known to be conservative.[69]

Joined by 13 companies and associations, the Formaldehyde Institute focused its suit upon the standard's labeling requirements, which were more extensive than those of OSHA's generic hazard communication standard.[70] Industry also filed for an administrative stay of the provisions from OSHA.[71]

OSHA designed these more extensive labeling provisions to address the special problem of formaldehyde emission from products; this was the first time OSHA attempted to address such an issue.[72] John F. Murray, president of the Formaldehyde Institute, noted that OSHA had not included the labeling provisions in the proposed rule for comment.[73] If the agency had included them, Murray stated, "we would have been there [at public meetings] for three weeks."[74]

The same provisions also came under scrutiny from the Office of Management and Budget (OMB). Under the Paperwork Reduction Act of 1980, Pub.L. 96-511, Sec. 2(a), Dec. 11, 1980, 94 Stat. 2812, as amended, 44 U.S.C.A. 3501 et seq. (1989), OMB has the authority to review the recordkeeping requirements of federal agencies to ensure that they do not

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[69] Ibid.

[70] Ibid., p. 52.

[71] Ibid., p. 53.

[72] Ibid.

[73] Ibid.

[74] Ibid.

impose an undue burden on the regulated parties, such as OSHA's employers. OMB partially approved the labeling requirements.[75] OSHA later resubmitted the requirements,[76] and OMB subsequently approved them.[77] However, industry continued to pursue the issue with OSHA. Finally, the agency agreed to issue an administrative stay of the contested provisions.[78]

The formaldehyde preenforcement challenges were consolidated into *UAW v. Pendergrass*, 878 F.2d 389 (D.C. Cir. 1989), which was decided on June 9, 1989. The reader should note that consolidation before the Court of Appeals for the D.C. Circuit was advantageous for organized labor, as previously discussed. Accordingly, the court held that OSHA did not sufficiently explain its finding that formaldehyde presented no significant carcinogenic risk to workers at exposure levels of 1 ppm or less, *UAW v. Pendergrass*, 878 F.2d 389 (D.C. Cir. 1989). The court stated:

> While our deference to the agency is at a peak for its choices among scientific predictions, we must still look for some articulation of reasons for those choices. Here the estimates [of cancer risk] are all over the lot, *UAW v. Pendergrass*, 878 F.2d 392 (D.C. Cir. 1989).

Hence, OSHA must now reconsider its risk assessment for

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[75] 53 FR 6628 (1988).

[76] 53 FR 26329 (1988).

[77] 53 FR 45080 (1988).

[78] 53 FR 50198 (1988). The administrative stay rendered this portion of the Formaldehyde Institute's suit moot.

exposures of 1 ppm or less.

## The Politics of Formaldehyde

The decision in *UAW v. Pendergrass* is precisely what unions in the apparel industry were seeking. As previously discussed, a significant number of garment workers are exposed to formaldehyde at levels below 1 ppm. In 1986 Jack Sheinkman, secretary-treasurer of the ACTWU, stated that "a million apparel workers are subject to low levels of exposure, including a quarter million with a 0.5 parts exposure, and another 14,000 textile workers have higher exposure levels."[79] Sheinkman concluded: "Although these workers are not exposed to the highest levels of formaldehyde...their numbers are so great that any significant risk of cancer or other diseases must be taken seriously."[80]

The apparel industry has responded by stating that further reductions in exposure levels will require some combination of ventilation engineering controls and afterwashing of fabric--alternatives so costly that the domestic garment industry will be crippled.[81]

One possible solution to the problem would be a reduction

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[79] Hal Taylor, "ACTW Says Proposed US Regs On Formaldehyde Still Unsafe," *Daily News Record*, May 21, 1986, p. 8.

[80] Ibid.

[81] For example, the reader is referred to Greene, "Formaldehyde: Debating Rules And Risks," p. 6, and Hal Taylor, "ACTWU blasts proposal on formaldehyde," *Women's Wear Daily*, May 14, 1986, p. 19.

in the amount of formaldehyde used in textile-treating. An anonymous shirt company executive has stated that lowering the amount of formaldehyde will not significantly alter durable-press properties.[82] Of course, the best solution would be the elimination of formaldehyde in textile-treating. Accordingly, a new technique which substitutes nontoxic polycarboxylic acids for formaldehyde has been developed.[83] However, the apparel industry generally goes on record as stating that no viable alternatives to formaldehyde exist, chiefly because of cost.

Thus, until a product is developed which can simultaneously meet the demands of the apparel manufacturers, garment workers, and consumers, the politics of formaldehyde will continue at OSHA.

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[82] Matthew Kasten, "Say Less Formaldehyde May Not Alter DP Properties," *Daily News Record*, April 24, 1987, p. 7.

[83] B. J. Spalding, "Wrinkle-free fabric *sans* formaldehyde," *Chemical Week*, September 7, 1988, p. 38.

# CONCLUSION

Does politics change science? No, it should be the other way around.[1]

Dr. Peter Infante

## The Fundamental Issue

This thesis has examined how both objective, scientific findings and subjective, political decisions shape OSHA's regulation of toxic substances under conditions of uncertainty. The fundamental question underlying the present work is: To what extent *should* political considerations influence regulatory policy in an environment of scientific uncertainty?

This author concludes that such regulatory policy should take subjective, political factors into account precisely because it is policy. In other words, policy represents society's attempts to resolve critical issues which are of a subjective nature. Nevertheless, this author also asserts that some elements of the regulatory policy process can incorporate political factors more legitimately than others.

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[1] Statement issued by Dr. Peter Infante through his attorney, in Marjorie Sun, "A Firing over Formaldehyde," *Science* 213 (1981), p. 631.

Thus, the author must attempt to differentiate between those elements which can legitimately be influenced by political considerations and those aspects which should remain insulated from such factors.

Although proposed solutions to this broad problem will necessarily seem incomplete, this author will offer several hypotheses based upon an examination of the appropriate roles of the legislature, judiciary, and bureaucracy in the regulation of occupational exposure to toxic substances.

## Congress

A discussion of the appropriate role of Congress in the regulation of occupational exposure to toxic substances should focus upon the view expressed by some analysts that the feasibility language of the Occupational Safety and Health Act of 1970 represents an invalid delegation of legislative authority to the bureaucracy. The author's position is that, given the level of knowledge when the Act was adopted, this language did not constitute an invalid delegation. The analysis in Chapter I demonstrated that Congress acted under circumstances of limited information on occupational health at the time of passage. Thus, by differentiating between safety and health concerns and including a specific toxic substance provision, Congress displayed a significant amount of foresight.

However, in light of increased information concerning the

health effects of occupational exposure to toxic substances as well as the costs associated with regulation, one might find the legislative delegation argument increasingly credible. At this point, the reader should recall Neil Sullivan's assertions, which were discussed in Chapter II. Briefly, Sullivan contends that Congress can best resolve the controversy surrounding feasibility in the regulation of occupational exposure to toxic substance because it is most accountable to the public and provides the most legitimate forum for interest group activity.

The logic of Sullivan's argument would suggest a congressional reconsideration of the feasibility issue. While this proposal is sound from a legal perspective, it is impractical because Congress cannot be forced to reconsider the issue. Furthermore, an analysis of congressional motives for legislative delegation from an interest group perspective demonstrates that Congress is unlikely to reconsider the issue voluntarily given the controversiality of issues surrounding OSHA in general.

Accordingly, a recurring theme in the interest group literature is that legislators seek to avoid conflict for fear of electoral sanction. As Michael T. Hayes states in discussing Morris P. Fiorina's research on congressional roll call voting behavior:

> The appeal of legislative delegation as a response to conflictual demand patterns [among interest groups] is suggested by Fiorina's recent effort to develop a

> rational choice model of congressional roll call voting behavior based on the assumption that the primary goal of any congressman must be to secure reelection....congressmen from deeply divided constituencies are clearly confronted with a no-win situation, as any explicit choice among the conflicting interests must forfeit the electoral support of the losing groups.[2]

Specifically, Hayes discusses "the reluctance of Congress to choose between business and labor interests," which are "two competing and well-organized interests."[3]

In sum, although Congress could provide an appropriate forum for the resolution of the political implications of feasibility, this author believes that it is unlikely to do so because of the controversy which OSHA has engendered. In contrast, Congress has been willing to pursue its oversight and investigatory functions in the regulation of occupational exposure to toxic substances. This author contends that legislators are more willing to engage in such activities because they do not fear electoral sanction from them. Indeed, the legislator may capitalize upon his participation in such activities by presenting himself to his constituency as a "watchdog" over the bureaucracy.

However, the reader should not misinterpret this

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[2] Michael T. Hayes, "The Semi-Sovereign Pressure Groups: A Critique of Current Theory and an Alternative Typology," *The Journal of Politics* 40 (1978), p. 137, citing Morris P. Fiorina, *Representatives, Roll Calls, and Constituencies* (Lexington: D. C. Heath, Lexington Books, 1975).

[3] Hayes, "The Semi-Sovereign Pressure Groups," p. 152.

examination of congressional motives as a criticism of the oversight and investigatory functions. As the analysis of formaldehyde in Chapter III illustrates, these functions play a vital role in the regulatory process.

## The Judiciary

Chapter II demonstrates that judicial review cannot provide a clear solution to the problem of regulation under conditions of scientific uncertainty. The chapter highlights two major deficiencies in preenforcement review of OSHA's standards. First, as Sullivan asserts, because feasibility is a political rather than legal concept, the courts cannot adequately define the term. The result is inconsistency of opinions among the reviewing courts. As the analysis of the *Benzene* and *Cotton Dust* decisions demonstrates, even the Supreme Court failed to bring consistency to this area of the law. In addition, judges often express their frustration at reviewing unwieldy records replete with scientific and technical data. It is unreasonable to expect even the most competent judges to be equal to such a task.

The formaldehyde cases in Chapter III demonstrate that the judiciary can play a critical role in the regulation of occupational exposure to toxic substances by forcing OSHA to justify its actions with substantial evidence. However, the difficulty inherent in this role is that the justifications which judges require can have broad technical and political

consequences which they are unqualified to impose. Court-mandated cost-benefit analysis provides an excellent example. Accordingly, this author argues that the Supreme Court stopped short of requiring cost-benefit analysis in *Benzene* because it recognized that it was unqualified to make this type of policy decision.

This author concludes that, in the regulation of occupational exposure to toxic substances, the judiciary walks a fine line between the fulfillment of its appropriate role through the use of the substantial evidence test and the unqualified imposition of justification requirements with broad policy consequences.

## The Bureaucracy

This chapter has discussed the problems inherent in the roles of Congress and the judiciary in the regulation of occupational exposure to toxic substances. Congress would provide an appropriate forum for the resolution of the feasibility issue because it is accountable to the public and can most legitimately account for interest group activity. However, it is precisely this openness which subjects Congress to electoral sanction. Thus, Congress chooses to avoid controversial issues such as feasibility and prefers to limit its involvement to the oversight and investigation of OSHA's activity. On the other hand, the judiciary's appropriate role in matters of scientific uncertainty is more limited than the

legislature's, although one must note that its actions can have broad policy consequences which it is unqualified to impose.

Therefore, this author concludes that the bureaucracy remains the appropriate arena in which to resolve the problem of scientific uncertainty in regulatory policy. This conclusion assumes that the bureaucracy could be redesigned to provide an optimal mix of legislative accessibility--to account for subjective, political factors--and judicial insulation with the added benefit of technical expertise--to ensure scientific objectivity.

In terms of this model, this thesis has clearly demonstrated that OSHA's regulation of toxic substances is too accessible to subjective, political factors. This author contends that the key element for change is OSHA's reliance upon scientific and technical information from sources outside the government. Furthermore, the analysis of formaldehyde shows that several federal agencies in addition to OSHA require objective information on toxic substances in order to fulfill their statutory mandates. Thus, *original* research efforts sponsored jointly by these agencies might be an integral part of the solution to the problem of scientific uncertainty in regulatory policy.

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April 5, 1989.

# APPENDIX I

# SUMMARY OF FEDERAL MINE SAFETY AND HEALTH REGULATION

Mining has been recognized historically as a particularly dangerous occupation and has been regulated extensively. This appendix discusses those aspects of mine safety and health which are significant to the development of U.S. occupational safety and health policy in general.

For example, one of the earliest federal attempts to deal with occupational safety and health was included in the Bureau of Mines Organic Act of 1910, which created the Bureau within the Interior Department. This Act provided that one of the Bureau's duties be the study of mine safety and health, May 16, 1910, c. 240, Sec. 2-3, 36 Stat. 370, as amended, 30 U.S.C.A. Sec. 3, 5 (1986). However, the Bureau's powers were restricted because it was not authorized to conduct inspections. Later acts, culminating in the Federal Coal Mine Health and Safety Act of 1969, Pub.L. 91-173, Dec. 30, 1969, 83 Stat. 742, as amended, granted the Bureau enforcement powers.

However, the problem with vesting enforcement for safety and health in the Department of Interior was that a conflict of interest existed between the Department's various

missions.[1] Because one of the Department's missions was to promote the development of the mining industry, it seemed to be an ally of business interests. On the other hand, this alliance might interfere with the Department's responsibilities for enforcing mine safety and health regulation.

This argument is precisely the one used by organized labor to protest the Interior Department's creation of a new enforcement agency, the Mining Enforcement and Safety Administration (MESA), in 1973. The unions argued that enforcement be transferred to the Department of Labor because they considered Interior to be "industry-oriented."[2]

The Federal Mine Safety and Health Act of 1977 greatly altered the regulatory framework, Pub.L. 95-164, Nov. 9, 1977, 91 Stat. 1290, as amended, 30 U.S.C.A. Sec. 801 et seq. (1989). The Act transferred enforcement to a new agency within the Department of Labor, the Mine Safety and Health Administration (MSHA). Furthermore, it improved protection for miners who are not employed in the coal industry. These miners had been covered by the Federal Metal and Nonmetallic

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[1] U.S. Congress, Senate, *Human Resources Committee--Federal Mine Safety and Health Amendments Act of 1977, S. Rep. No. 95-181*, 95th Cong., 1st sess., reprinted in *1977 U.S. Code Congressional & Administrative News* 3, p. 3405.

[2] Nicholas Ashford, *Crisis in the Workplace: Occupational Disease and Injury, A Report to the Ford Foundation* (Cambridge, Mass.: The MIT Press, 1976), p. 52, citing *Occupational Safety and Health Reporter* (the Bureau of National Affairs, Inc.), Vol. 2, No. 49 (May 10, 1973), p. 1441; Vol. 3, No. 1 (June 7, 1973), pp. 28, 30.

Mine Safety Act of 1966, Pub.L. 89-577, Sept. 16, 1966, 80 Stat. 772, but the protection provided by this legislation was not as comprehensive as that provided to coal miners by the 1969 Act. Thus, the 1977 Act repealed the 1966 Act and redesignated the 1969 Act as applicable to all miners.

## APPENDIX II
## CHRONOLOGY OF STANDARD-SETTING ACTIVITY[1]

| OSHA Standard | NIOSH Recommendation (Criteria Document) | Advisory Committee (First Meeting) | Emergency Temporary Standard (ETS) | Hearings Begin | Final Standard |
|---|---|---|---|---|---|
| Asbestos | 1/72 | 2/72 | 12/7/71 | none | 6/7/72 |
| | Most current significant revision 6/20/86. | | | | |
| 14 Carcinogens | none | 6/73 | 5/3/73 | 9/73 | 1/29/74 |
| | MOCA[2] standard deleted 8/20/76 to conform to judicial decision. | | | | |
| Vinyl Chloride | 3/74 | none | 4/5/74 | 6/74 | 10/4/74 |

[1] Adapted from John M. Mendeloff, *The Dilemma of Toxic Substance Regulation: How Overregulation Causes Underregulation* (Cambridge, Mass.: The MIT Press, 1988), pp. 268-71.

[2] 4,4-methylene-bis(2-chloroaniline).

| OSHA Standard | NIOSH Recommendation (Criteria Document) | Advisory Committee (First Meeting) | Emergency Temporary Standard (ETS) | Hearings Begin | Final Standard |
|---|---|---|---|---|---|
| Coke Oven Emissions | 2/73 | 11/74 | none | 11/75 | 10/22/76 |
| | Revised 9/13/85 to conform to judicial decision. | | | | |
| Benzene | 7/74 | none | 5/3/77 | 7/77 | 2/10/78 |
| | Standard deleted 6/19/81 to conform to judicial decision; revised standard promulgated 9/11/87. | | | | |
| DBCP[3] | 9/77 | none | 9/9/77 | 12/77 | 3/17/78 |
| Arsenic (Inorganic) | 1/74 | none | none | 4/75 | 5/5/78 |
| | Supplemental statement on risk assessment issued 1/14/83 to conform to judicial decision. | | | | |
| Cotton Dust | 9/74 | none | none | 4/77 | 6/23/78 |
| | Revised 12/13/85 to conform to judicial decision. | | | | |

[3] 1,2-dibromo-3-chloropropane.

| OSHA Standard | NIOSH Recommendation (Criteria Document) | Advisory Committee (First Meeting) | Emergency Temporary Standard (ETS) | Hearings Begin | Final Standard |
|---|---|---|---|---|---|
| Acrylonitrile | 9/77 | none | 1/17/78 | 3/78 | 10/3/78 |
| Lead | 1/73 | none | none | 3/77 | 11/14/78 |
| | Revised 11/12/82 to conform to judicial decision; economic and technological feasibility determined for nine industry sectors 7/11/89 to conform to judicial decision. | | | | |
| Cancer Policy | none | none | none | 5/78 | 1/22/80 |
| | Feasibility revisions 1/21/81 to conform to benzene decision; administrative stays of candidate and priority lists 1/5/82 and 1/4/83. | | | | |
| Access to Employee Records[4] | none | none | none | 12/78 | 5/23/80 |
| | Proposal to modify rule 7/13/82; numerous administrative stays beginning in 1982. | | | | |

[4] Judicial review has determined that this requirement is a "rule" rather than a "standard." The reader is referred to Appendix III.

| OSHA Standard | NIOSH Recommendation (Criteria Document) | Advisory Committee (First Meeting) | Emergency Temporary Standard (ETS) | Hearings Begin | Final Standard |
|---|---|---|---|---|---|
| Coal Tar Pitch, Modified Interpretation | 9/77 | none | none | 5/82 | 1/21/83 |
| | Original interpretation adopted 11/21/72; modified to exclude petroleum asphalt from coverage. | | | | |
| Hazard Communication | 1974 | 9/74 | none | 6/82 | 1/25/83 |
| | Rulemaking began for "Hazard Identification" but was withdrawn 2/12/81; the more comprehensive "Hazard Communication" standard includes material safety data sheets (MSDS) and employee training; coverage extended to nonmanufacturing sectors 8/24/87 to conform to judicial decisions. | | | | |
| Ethylene Oxide | none | none | none | 7/83 | 6/22/84 |
| | Standard revised 10/11/85 to exclude labeling of pesticides regulated by EPA under Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); organized labor and public interest groups unsuccessfully argued that OSHA's label was more explicit than EPA's. | | | | |

| OSHA Standard | NIOSH Recommendation (Criteria Document) | Advisory Committee (First Meeting) | Emergency Temporary Standard (ETS) | Hearings Begin | Final Standard |
|---|---|---|---|---|---|
| Formaldehyde | 12/76 | none[5] | none | 5/86 | 12/4/87 |
| | Hazard communication provisions temporarily stayed 12/13/88 so that full provisions of generic hazard communication standard could be incorporated. | | | | |
| Air Contaminants | none[6] | none | none | 7/88 | 1/19/89 |
| | Original adoption of established federal standards 5/29/71; revision lowered 212 exposure limits and established new limits for 164 substances not previously regulated. | | | | |

[5] Eight federal agencies, including OSHA, participated in the Federal Panel on Formaldehyde, which was formed 4/80.

[6] At 54 FR 2369 (1989), OSHA explains that NIOSH recommended new or lower exposure limits (RELs) for approximately 190 chemicals in *Recommendations for Occupational Safety and Health Standards*, Sept. 1986.

# APPENDIX III
# JUDICIAL REVIEW OF STANDARDS[1]

## Access to Employee Exposure and Medical Records

*Louisiana Chemical Association v. Bingham*
657 F.2d 777 (5th Cir. 1981)

The district court dismissed the case for want of jurisdiction, 496 F.Supp. 1188 (W.D.La. 1980), since the Occupational Safety and Health Act grants the appellate court original jurisdiction for preenforcement review of standards. On appeal, the court of appeals for the Fifth Circuit remanded this case to the district court. The court of appeals held that the regulations governing access to records be treated as a "rule" under the Act's provision for employer recordkeeping requirements, 29 U.S.C.A. Sec. 657(c) and (f) (1985), rather than a "standard" issued according to 29 U.S.C.A. Sec. 655(b) (1985). Thus, the district court had jurisdiction. The lower court affirmed the standard, 550 F. Supp. 1136 (W.D.La. 1982), and the court of appeals affirmed the decision without opinion, 731 F.2d 280 (5th Cir. 1984).

## Acrylonitrile

*Vistron v. OSHA*
6 O.S.C.H. 1483 (6th Cir. 1978)

The ETS was contested and a request for stay of standard was denied. The petition for review was then withdrawn.

## Arsenic (Inorganic)

*ASARCO Inc. v. OSHA*
746 F.2d 483 (9th Cir. 1984)

The court of appeals affirmed the standard after OSHA developed a supplemental statement of risk assessment to comply with the benzene decision, according to the court's earlier remand, 647 F.2d 1 (9th Cir. 1981).

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[1] Adapted from John M. Mendeloff, *The Dilemma of Toxic Substance Regulation: How Overregulation Causes Underregulation* (Cambridge, Mass.: The MIT Press, 1988), pp. 272-75, citing U.S. Congress, Office of Technology Assessment, *Preventing Injury and Illness in the Workplace*, p. 365.

**Asbestos**

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

The court of appeals affirmed OSHA's 1972 asbestos standard. The court discussed the effects of OSHA's hybrid rulemaking procedure on the application of the substantial evidence test.

*Asbestos Information Association/North America v. OSHA*
727 F.2d 415 (5th Cir. 1984)

The court of appeals vacated the ETS issued on November 4, 1983 to lower exposure limit further than existing permanent standard.

**Benzene**

*Industrial Union Department, AFL-CIO v. American Petroleum Institute*
448 U.S. 607, 100 S.Ct. 2844, 65 L.Ed.2d 1010 (1980)

reported below: *American Petroleum Institute v. OSHA*
581 F.2d 493 (5th Cir. 1978)

The Supreme Court affirmed the lower court's decision to vacate the benzene standard but used different reasoning.

**Coke Oven Emissions**

*American Iron and Steel Institute v. OSHA*
577 F.2d 825 (3rd Cir. 1978)

The court of appeals affirmed the major requirements of the coke oven emissions standard. The Supreme Court agreed to review the decision, 448 U.S. 909, 100 S.Ct. 3054, 65 L.Ed.2d 1139 (1980), but the request for review was withdrawn before the case could be heard, 448 U.S. 917, 101 S.Ct. 38, 65 L.Ed.2d 1180 (1980).

**Cotton Dust**

*American Textile Manufacturers Institute v. Donovan*
452 U.S. 490, 101 S.Ct. 2478, 69 L.Ed.2d 185 (1981)

reported below: *AFL-CIO v. Marshall*
617 F.2d 636 (D.C. Cir. 1979)

Both the court of appeals and the Supreme Court upheld the major requirements of the cotton dust standard as applied to the textile industry.

*Cotton Warehouse Association v. Marshall*
449 U.S. 809, 101 S.Ct. 56, 66 L.Ed.2d 12 (1980)

The Supreme Court vacated the decision of the court of appeals with respect to the warehousing and classing segments of the industry and remanded in light of the benzene decision.

*Texas Independent Ginners Association v. Marshall*
630 F.2d 398 (5th Cir. 1980)

The court of appeals vacated the cotton dust standard as applied to cotton ginning operations.

**Ethylene Oxide**

*Public Citizen Health Research Group v. Auchter*
702 F.2d 1150 (D.C. Cir. 1983)

Public Citizen and organized labor requested a court order compelling OSHA to issue an ETS. The district court issued such an order, 554 F. Supp. 242 (D.C.D.C. 1983). On appeal, the court of appeals refused to order that an ETS be issued but did require OSHA to expedite its permanent rulemaking process.

**Formaldehyde**

*UAW v. Donovan*
590 F.Supp. 747 (D.C.D.C. 1984)

The district court ordered OSHA to reconsider its refusal to issue an ETS for formaldehyde in light of new scientific evidence. The case was transferred to the court of appeals, 756 F.2d 162 (D.C. Cir. 1985), in accordance with the decision in *Telecommunications Research & Action Center v. Federal Communications Commission (TRAC)*, 750 F.2d 70 (D.C. Cir. 1984).[2] The court of appeals upheld the district court's order.

*UAW v. Pendergrass*
878 F.2d 389 (D.C. Cir. 1989)

Organized labor sought preenforcement review of permanent formaldehyde standard. The court held that OSHA did not sufficiently explain its finding that formaldehyde presented

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[2] *TRAC* holds that the court of appeals has exclusive jurisdiction to hear all suits which might affect its future powers of review when a statute, such as the Occupational Safety and Health Act, grants the court of appeals review of final agency action.

no significant carcinogenic risk to workers at exposure levels of 1 ppm or less. In addition, the court held that evidence did not support OSHA's refusal to authorize medical removal protection for workers disabled as a result of exposure to formaldehyde. The court remanded these two issues to OSHA and affirmed the other requirements of the standard.

**Fourteen Carcinogens**

*Dry Color Manufacturers' Association v. Department of Labor*
486 F.2d 98 (3rd Cir. 1973)

The court of appeals vacated the ETS for DCB[3] and EI.[4]

*Synthetic Organic Chemical Manufacturers Association v. Brennan (SOCMA I)*
503 F. 2d 1155 (3rd Cir. 1974)

The court of appeals affirmed the permanent standard for ethyleneimine. The Supreme Court denied review, 420 U.S. 973, 95 S.Ct. 1396, 43 L.Ed.2d 653 (1975).

*Synthetic Organic Chemical Manufacturers Association v. Brennan (SOCMA II)*
506 F.2d 385 (3rd Cir. 1974)

The court of appeals vacated the standard for MOCA.[5] The Supreme Court denied review, *Oil, Chemical and Atomic Workers International Union, AFL-CIO v. Dunlop*, 423 U.S. 830, 96 S.Ct. 50, 46 L.Ed.2d 48 (1975), reh den 423 U.S. 886, 96 S.Ct. 163, 46 L.Ed.2d 118 (1975).

**Hazard Communication**

*United Steelworkers of America, AFL-CIO-CLC v. Auchter (United Steelworkers I)*
763 F.2d 728 (3rd Cir. 1985)

The court of appeals upheld the hazard communication standard for manufacturing but required OSHA to extend coverage to nonmanufacturing sectors as well, unless the agency could demonstrate that the standard would not be feasible for those sectors.

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[3] 3,3'-dichlorobenzedine.

[4] Ethyleneimine.

[5] 4,4-methylene-bis(2-chloroaniline).

*United Steelworkers of America, AFL-CIO-CLC v. Pendergrass (United Steelworkers II)*
819 F.2d 1263 (3rd Cir. 1987)

Petitioners in this case sought enforcement of previous decision, *United Steelworkers I*. The court of appeals agreed with petitioners that OSHA had unduly delayed the extension of coverage by requesting more comment. The court held that nonmanufacturing sectors had had adequate opportunity to respond during the original rulemaking, which had not specified which sectors would be affected.

**Lead**

*United Steelworkers of America, AFL-CIO-CLC v. Marshall*
647 F.2d 1189 (D.C. Cir. 1980)

The court of appeals affirmed the lead standard in part but directed OSHA to determine the feasibility of engineering controls for thirty-eight industries and occupations. The Supreme Court denied review, *Lead Industries Association, Inc. v. Donovan*, 453 U.S. 913, 101 S.Ct. 3148, 3149, 69 L.Ed.2d 997 (1981).

**Pesticides**

*Florida Peach Growers Association, Inc. v. Department of Labor*
489 F.2d 120 (5th Cir. 1974)

The court of appeals vacated the ETS for pesticides.

**Vinyl Chloride**

*Society of Plastics Industry, Inc. v. OSHA*
509 F.2d 1301 (2nd Cir. 1975)

The court of appeals affirmed the vinyl chloride standard. The Supreme Court denied review, *Firestone Plastics Co. v. U.S. Department of Labor*, 421 U.S. 992, 95 S.Ct. 1998, 44 L.Ed.2d 482 (1975).

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