

California Western Law Review

Volume 21 | Number 1

Article 4

1984

Decentralizing Occupational Health and Safety Regulation: An Evaluation of the Foundation and Prospects

David P. McCaffrey

Follow this and additional works at: <https://scholarlycommons.law.cwsl.edu/cwlr>

Recommended Citation

McCaffrey, David P. (1984) "Decentralizing Occupational Health and Safety Regulation: An Evaluation of the Foundation and Prospects," *California Western Law Review*. Vol. 21 : No. 1 , Article 4.
Available at: <https://scholarlycommons.law.cwsl.edu/cwlr/vol21/iss1/4>

This Article is brought to you for free and open access by CWSL Scholarly Commons. It has been accepted for inclusion in California Western Law Review by an authorized editor of CWSL Scholarly Commons. For more information, please contact alm@cwsl.edu.

Decentralizing Occupational Health and Safety Regulation: An Evaluation of the Foundation and Prospects

DAVID P. MCCAFFREY*

INTRODUCTION

The argument for government regulation of occupational safety and health (OSH) is that unregulated firms have incentive to tolerate relatively high levels of disease and injury. To assert that firms “tolerate relatively high levels of disease and injury” is to assert that firms invest less in safety-related inputs (machine guards, training, emission controls, and so forth) than firms would if they bore all the costs of the occupational injuries and illnesses associated with their production. Because firms do not bear these costs, they tend to “waste” the physical well-being of workers.

The Occupational Safety and Health Administration (OSHA)¹ compensates for this alleged market failure by regulating levels of safety directly, and enforcing these regulations through inspection and fines for violations. The basic logic of the enforcement program is that OSHA can make it unprofitable for firms to violate its regulations. Through fines that vary with the severity, frequency, willfulness, or repeated nature of the violations,² OSHA can theoretically assure that the firms’ expected penalties for violating regulations (penalty for violation multiplied by the probability of inspection and detection) exceeds the expected benefits of violating the regulations (avoidance of regulatory compliance costs). OSHA can conceivably strengthen its enforcement program, if necessary, by increasing the frequency of inspections, and/or increasing the penalties for any infractions.³

OSHA’s enforcement program has been criticized repeatedly. It is argued that with any conceivable budget OSHA can inspect only a miniscule proportion of firms, and that fines have been far too low to deter violations;⁴ that uniform regulations are inappropriate be-

* Assistant Professor of Public Administration, Nelson A. Rockefeller College of Public Affairs and Policy, State University of New York at Albany; B.A., University of Massachusetts, 1973; Ph.D., Sociology, State University of New York at Stony Brook, 1979.

1. 20 U.S.C. § 651-78 (1976).

2. 29 U.S.C. § 666(a)-(e) (1975).

3. See Table I in text, at 109.

4. See, for example, Viscusi, *The Impact of Occupational Safety and Health Regu-*

cause the benefits and costs of a uniform regulation differ significantly across firms;⁵ and that most accidents involve transitory violations of safe practices, violations that can be detected only if inspectors are present constantly.⁶ The best that can be said of OSHA, the argument continues, is that the agency has reduced some major occupational health hazards (e.g., asbestos, cotton dust, and lead), and increased managers' and employees' attention to safety and health problems.⁷

Now is the time, the argument concludes, to move to a second generation of regulation that recognizes the new managerial and worker awareness of health and safety problems. Instead of stressing enforcement of uniform, necessarily inefficient regulation, OSHA could maintain and encourage management-labor cooperation in dealing with safety and health problems. If employees are given the information to monitor health and safety problems in their firms, if advocates of strong health and safety programs gain a foothold in management, and if frameworks for management-labor cooperation are established, then preventing injuries and illnesses will become a much higher priority for firms than in the pre-OSHA period. The market failure justifying regulation will thus be remedied directly, at least in a large number of firms. OSHA's enforcement of uniform regulations, with its rigidities, sporadic inspections, and other problems could be significantly deemphasized. OSHA could thus profitably channel its resources toward information and training, and restrict its direct regulatory control mainly to firms in which strong managerial and labor support of safety programs does not develop.⁸

lation, 10 BELL J. OF ECON. 117, 126 (1979). Professor Viscusi commented that, with 3.6 million workplaces in the nation in 1973, the probability of being inspected in any year from 1971 to 1975 was only 0.02, and average penalties for firms were only \$1.52. This criticism oversimplifies the inspection program. Eliminating firms that have little chance of being inspected (e.g., insurance offices, convenience stores, etc.), the number of firms that OSHA might be interested in is much smaller. One study of 36,314 manufacturing firms found that, in 1977, fifteen percent of firms with eleven to forty-nine employees were inspected, eighteen percent of firms with fifty to ninety-nine employees were inspected, and twenty-nine percent of firms with 100 or more employees were inspected. See CENTAUR ASSOCIATES, INC., MEASURING THE EFFECTIVENESS OF OSHA'S WORKPLACE INSPECTIONS. Prepared for: Occupational Safety and Health Administration, 32-45 (Dec. 1979).

5. See E. BARDACH & R.A. KAGAN, GOING BY THE BOOK: THE PROBLEM OF REGULATORY UNREASONABLENESS 58 (1982) [hereinafter cited as BARDACH & KAGAN]; and L. BACOW, BARGAINING FOR JOB SAFETY AND HEALTH 36, 48 (1980) [hereinafter cited as BACOW].

6. See J. MENDELOFF, REGULATING SAFETY 85 (1979).

7. See *infra* notes 43-56, 59-64 and accompanying text.

8. See BACOW, *supra* note 5, at 122; *Voluntary Protection Programs to Supplement enforcement and to provide safe and healthful working conditions* 47 Fed. Reg. 29,025 (1982); *Comprehensive Health Policy: Announcement and Request for Public Comment* 48 Fed. Reg. 54,546 (1983).

A persistent theme running through the writings, conferences, and statements on occupational safety and health policy is that the bases of such decentralized cooperation are much stronger today than in the early or mid-1970's. That is, managerial health and safety staff are reportedly far stronger today than in pre-OSHA times, and other managers now—even though grudgingly—recognize the importance of occupational safety and health concerns.⁹ Furthermore, workers' ability to negotiate for health-safety resources has increased substantially in the last ten years.¹⁰

This Article examines (1) how managerial and worker response to occupational safety and health problems has reportedly changed over the last decade, and (2) the empirical significance of such changes. The fundamental issue explored is whether efforts to decentralize health and safety regulation to firms themselves will be able to draw on a greater employee involvement in health and safety issues, and a greater managerial commitment to occupational safety and health.

Section I discusses the theoretical argument for OSHA regulation. This argument is based on safety programs' expected gains and losses for the total firm. A model of organizational decision-making within the firm can be inferred from this economic theory. The theory implies that certain subunits will influence goal formation strongly and others only weakly; that there will not be strong internal support for occupational health and safety programs; and that firms' investment in health and safety will be relatively low. Section II discusses how OSHA's regulatory program tries to remedy directly the effects of this market failure, and how the aggressiveness and tone of the enforcement program has varied over time. Section III examines the extent of changes in employee involvement in health and safety issues as reflected, for example, in collective bargaining agreements. Section IV explores greater managerial commitment to health and safety as reflected, for example, in firms' occupational health programs and in expenditures on health and safety. The conclusion discusses the implications of these changes for the current efforts to decentralize health and safety regulation to firms.

I. THE ARGUMENT FOR OCCUPATIONAL SAFETY AND HEALTH REGULATION

A. *The Argument at the Level of the Firm*

The argument for occupational safety and health regulation is

9. See *infra* notes 59-64 and accompanying text.

10. See *infra* notes 43-56 and accompanying text.

that unregulated, profit-maximizing firms underinvest in injury and illness prevention. It notes that profit-maximizing firms will invest in safety inputs (machine guards, training, emission controls, etc.) "to the point where [the inputs'] marginal cost is just offset by the marginal savings they create by reducing injuries (thus avoiding attendant workers' compensation premiums, compensating wage differentials, production losses, machine damage, and so on)."¹¹

Occupational injuries and illnesses do, however, "cost" the firms workers' compensation premiums, compensating wage differentials (hazard pay), production losses, and machine damage. Production losses and machine damage differ from workers' compensation premiums and wage differentials, however, in an important respect. Firms bear all the costs of lost production and machine damage, and so will invest up to accidents' full production and machine costs to prevent the accidents. Injuries and illnesses also cost *workers* their income and physical well-being; the purpose of workers' compensation programs and compensating wage differentials is to shift these costs from workers to firms. However, workers' compensation and wage differentials probably cost firms less than the total cost to workers of the injuries and illnesses, and thus workers themselves subsidize the firms' injury-illness costs.

There are good reasons to believe that workers' compensation and compensating wage differentials do not cover the costs to workers of occupational injuries and illnesses. First, workers' compensation systems usually replace only a portion of lost wages, and have ceilings on benefits based on states' average weekly wages.¹² Second, the workers' compensation system does not compensate occupational disease victims adequately because of statutory restrictions on claims, and because it is difficult for claimants to link their illnesses with their occupations.¹³ Third, pressing contested workers' compensation claims is often time-consuming and costly, and workers may not have the resources to negotiate the workers' compensation system successfully.¹⁴ Fourth, the studies claiming that workers in general receive additional wages compensating them for

11. Smith, *The Impact of OSHA Inspections on Manufacturing Injury Rates*, 14 J. OF HUM. RESOURCES 145, 147-48 (1979).

12. III F. COLLINGNON, ESTIMATING AND FINANCING THE COSTS OF STATE WORKERS' COMPENSATION, RESEARCH REPORT OF THE INTERDEPARTMENTAL WORKERS' COMPENSATION TASK FORCE 35, 43 (1979).

13. *Id.* at 38. See also D.P. MCCAFFREY, OSHA AND THE POLITICS OF HEALTH REGULATION § 3.2.4, at 49 (1982) [hereinafter cited as MCCAFFREY] and references therein.

14. See generally *Occupational Diseases, 1977: Hearings before the Subcomm. on Labor of the Senate Comm. on Human Resources*, 95th Cong. 1st Sess. (1978); D.S. BARTH & H.A. HUNT, WORKERS' COMPENSATION AND WORK-RELATED ILLNESSES AND DISEASES (1980).

hazardous work are, at best, very ambiguous because data used in the studies are too general and crude to support convincing statistical tests of the claims.¹⁵

Consequently, profit maximizing firms will invest less than the full societal costs of occupational injuries and illnesses to prevent injuries and illnesses. In effect, firms will tend to waste workers' physical well-being, and thus governmental regulation of health and safety is warranted.

B. Organizational Implications of the Argument

The argument of occupational safety and health regulation is discussed at the level of the firm. It focuses on "management" and "workers," and does not articulate what decisionmaking processes look like *within* firms that underinvest in health and safety. However, a model of organizational decisionmaking, described below, is implied by the argument for occupational safety and health regulations. (Section IV will discuss how organizational changes within firms reportedly correct the market failures justifying OSH regulation).

Organizations can be thought of as coalitions of participants. Participants bargain and reach shifting agreements on what the organization will produce, what the products' special qualities will be, the side effects of production that will be monitored and controlled, and so forth.¹⁶ Participants in this bargaining have competing interests, so the positions and pressures of departments like sales, production, and pricing frequently conflict.¹⁷

At any given time, the important problems facing the firm shape who is and is not influential in this bargaining. Some problems are critical. To take an exaggerated example, keeping production lines running is more important than keeping the firm's social activities in order. Beyond the very short run, participants who have the technical competence to deal with critical problems, and who are not easily replaced, are in a stronger bargaining position than others.¹⁸ If the problems are stable, these participants' power will also be stable.

The demands of the production and sales departments are likely to count heavily in a firm because either department's failure shows

15. Smith, *Compensating Wage Differentials and Public Policy: A Review*, 32 *INDUS. & LAB. REL. REV.* 339 (1979).

16. R.N. CYERT & J.G. MARCH, *A BEHAVIORAL THEORY OF THE FIRM* § 3.1.1, at 27 (1963).

17. *Id.* § 6.1, at 115.

18. J. PFEFFER & G.R. SALANCIK, *THE EXTERNAL CONTROL OF ORGANIZATIONS* 230 (1978); Blackburn, *Lower Participant Power: Toward a Conceptual Integration*, 6 *ACAD. OF MGMT. REV.* 127, 130 (1981).

up quickly in a firm's income. In contrast, when a firm is able to pass on much of the cost of occupational injuries and illnesses to workers, occupational safety and health maintenance will be less compelling because there is only a small probability that a firm will register sizable losses from deferring health and safety investments.¹⁹

Thus, unregulated, profit maximizing firms tend to underinvest in employee safety and health because they do not bear a large share of the costs of occupational injuries and illnesses. Managerial staff who favor health and safety investment will not compete for resources effectively with departments such as production and sales. The Occupational Safety and Health Administration tries to remedy the effects of this situation by specifying that firms must maintain certain levels of health and safety. The next section discusses the nature and trends of OSHA's regulatory program.

II. OSHA'S REGULATORY PROGRAM

Standard setting and inspections are the two key elements of OSHA's regulatory program. By setting standards OSHA specifies, for example, that workers' exposure to toxic substances cannot exceed certain levels, that machines must have certain safety devices, that workers must receive health-safety training, and so on.²⁰ OSHA's inspections attempt to enforce these standards (or regulations), levying fines for violations.²¹ Over its twelve year history, OSHA's standards setting activity has been concentrated in two periods—1971 and 1977 to 1978.

A. Standards Setting

Prior to the Occupational Safety and Health Act, the Department of Labor required that firms performing government supported work adhere to numerous safety and health standards, such as requirements that firms maintain safety devices on certain machines.²² Also, private standards setting associations such as the National Fire Protection Association and the American National Standards Institute had developed voluntary safety and health standards applying to most types of work.²³ In 1971, as mandated by

19. See *supra* notes 12-15 and accompanying text.

20. 29 U.S.C. § 655 (1975).

21. *Id.* § 659.

22. N.A. ASHFORD, *CRISIS IN THE WORKPLACE: OCCUPATIONAL DISEASE AND INJURY, A REPORT TO THE FORD FOUNDATION* § 2.4.2, at 51 (1976) [hereinafter cited as ASHFORD].

23. See Hamilton, *The Role of Nongovernmental Standards in the Development of Mandatory Federal Standards Affecting Safety or Health*, 56 TEX. L. REV. 1329 (1978).

the Occupational Safety and Health Act,²⁴ OSHA made these voluntary standards compulsory for all firms subject to the Act.²⁵ Most of these standards were safety standards, but the initial standards also included exposure limits (Threshold Limit Values, or TLV's) for about 420 toxic substances. These TLV's did not require work-practice controls, exposure monitoring, recordkeeping, or other characteristics of standards developed after 1971; the TLV exposure limits have also been criticized as being relatively high.²⁶

Since 1971, OSHA's additional standards have principally been for toxic substances. The most intensive development of standards since 1971 occurred in 1977-1978, which were the first two years of the administration of Eula Bingham under President Carter.²⁷

24. 29 U.S.C. § 655(a) (1975).

25. 29 C.F.R. § 1910 (1983).

26. ASHFORD, *supra* note 22, § 6.4.1, at 296.

27. To 1984, there had been twelve major final standards: asbestos 29 C.F.R. § 1910.1001 (1983); thirteen little-used carcinogens 29 C.F.R. §§ 1910.1003-1910.1016 (1983) [originally, OSHA issued standards for fourteen carcinogens, including the thirteen plus a more widely used substance trade named MOCA. The standard for MOCA was vacated on procedural grounds in *Synthetic Organic Chem. Mfr's Ass'n v. Brennan*, 506 F.2d 385 (3d. Cir. 1974), *cert. denied sub nom.*, *Oil, Chem. & Atomic Worker's Int'l Union AFI-CIO v. Dunlop*, 423 U.S. 830 (1975); *see also* MCCAFFREY, *supra* note 13, § 5.1.2, at 82, and the references therein]; vinyl chloride 29 C.F.R. § 1910.1017 (1983); coke oven emissions 29 C.F.R. § 1910.1044 (1983); DBCP 29 C.F.R. § 1910.10 (1983); arsenic 29 C.F.R. § 1910.1018 (1983); cotton dust 29 C.F.R. § 1910.1043 (1983); acrylonitrile 29 C.F.R. § 1910.1045 (1983); lead 29 C.F.R. § 1910.1025 (1983); hearing conservation programs 29 C.F.R. § 1910 (1983); noise exposure 29 C.F.R. § 1910 (1983); revised exposure limits for asbestos 29 C.F.R. § 1910 (1983); and labeling of toxic substances in the workplace 29 C.F.R. § 1910.1200.

The most intensive standards development since 1971 occurred in 1977-1978. OSHA had considered the arsenic, cotton dust, and lead standards for several years, but did not issue the final standards until Bingham's administration; *see* MCCAFFREY, *supra* note 13, § 6.1, at 105. OSHA issued the DBCP and acrylonitrile standards, initially as emergency temporary standards, after the General Accounting Office, among others, had criticized OSHA's slow development of standards (U.S. GENERAL ACCOUNTING OFFICE, *DELAYS IN SETTING WORKPLACE STANDARDS FOR CANCER CAUSING AND OTHER DANGEROUS SUBSTANCES* (1977)), and Bingham noted the criticism before the two-year wave of activity (*Performance on the Occupational Safety and Health Administration: Hearings before a Subcomm. on Government Operations*, 95th Cong., 1st Sess. (1977)). Also, five days after Bingham assured the House of Representatives that OSHA would respond immediately to evidence of workers being in "grave danger" from toxic substances, OSHA issued an emergency standard for benzene (42 Fed. Reg. 22,516 (1977)) and issued a permanent standard for benzene nine months later (43 Fed. Reg. 5,918 (1978)) (later codified at 29 C.F.R. § 1910 (1983)).

The Bingham administration issued no major additional final standards after 1978. The Bingham administration issued the standard for occupational exposure to benzene (43 Fed. Reg. 5,918 (1978)). However, the Supreme Court struck down the standard, with the most important issue being the relative weakness of the evidence of risk associated with lower concentrations of benzene. *Industrial Union Dept. AFL-CIO v. Am. Petroleum Inst.*, 448 U.S. 607 (1980). In 1980, OSHA issued a major policy framework for the identification, classification, and regulation of potential carcinogens. However, the framework was not a regulation of substances themselves, and was in fact disregarded by the Reagan administration; *see* 29 C.F.R. § 1990 (1983); and MCCAFFREY, *supra* note 13, § 6.1.7, at 125. Also, the hearing conservation and labeling standards

B. *Inspections*

OSHA enforces its standards through inspections and fines for violations.²⁸ The agency has at times relied on confrontational enforcement, far more, as opposed to consultation with employers. The aggressiveness of OSHA's enforcement program grew through the 1970's, peaked with the Bingham administration from 1977 to 1980, and shifted to a decidedly less confrontational approach under Thorne Auchter from 1981 to 1983.

Several variables, taken together, indicate these shifts. Table I lists four of these variables: the number of inspections, the average proposed penalties per inspection, the ratio of penalties actually paid in a fiscal year to penalties proposed in a fiscal year, and the percentage of inspections contested by employers. Although each variable is ambiguous in certain respects, changes in the variables are sufficiently strong to suggest changes in enforcement policies. For example, the decline in average proposed penalties per inspection from 1981 to 1983 could suggest that more firms had complied with OSHA regulations; however, the shift in 1981 is much too abrupt to be explained by sudden compliance. Similarly, the penalties remitted in a fiscal year are not necessarily for inspections conducted in that year because of lags between citation and payment, and so Column 3 is not a direct accounting record of the percentage of proposed penalties actually collected in a certain year. However, the relationship between the two figures in a given year indicates reasonably well OSHA's willingness to impose penalties over employers' strong objections, employers' relative willingness to contest the penalties, and the degree of eventual penalty mitigation.

Table I suggests that the number of inspections dropped substantially after 1976. However, this decline reflected a decline in "quick" low-payoff inspections, inspections of larger firms, a shift to more time-consuming health hazard inspections, and an increased coverage in individual inspections.²⁹ The average proposed penalties per inspection peaked during the Bingham administration, and dropped substantially during the Auchter administration. The

issued under Thorne Auchter's administration, beginning in 1981, eased the requirements of standards proposed but not issued in final form earlier. Supporters of the administration maintained that the modifications improved the efficiency of the standards, while critics argued that the standards had been excessively weakened. See O.S.H. REP. (BNA) 891 (Mar. 17, 1983), O.S.H. REP. (BNA) 691 (Dec. 1, 1983).

28. 29 U.S.C. § 659 (1975).

29. See the OSHA responses in the reports by the U.S. GENERAL ACCOUNTING OFFICE, *WORKPLACE INSPECTION PROGRAM WEAK IN DETECTING AND CORRECTING SERIOUS HAZARDS* (1978); *SPORADIC WORKPLACE INSPECTIONS FOR LETHAL AND OTHER SERIOUS HEALTH HAZARDS* (1978); and *HOW EFFECTIVE ARE OSHA'S COMPLAINT PROCEDURES?* (1979).

TABLE I

OSHA INSPECTION ACTIVITY, FY 1973-1983

Fiscal Year	Number of Inspections	Average Proposed ¹ Penalties Per Inspection	Remitted/Proposed Penalties	Percentage Inspections Contested
1973	47,564	\$75	.61	3%
1974	77,093	75	.66	3
1975	80,949	76	.69	4
1976	90,369	95	.65	6
1977	59,932	123	.61	7
1978	57,242	205	.41	10
1979	57,937	190	.44	11
1980	63,363	232	.44	22
1981	57,241	124	.73	11
1982 ²	52,783	52	.90	5
1983 ^{2,3}	26,765	\$51	.81	3

SOURCE: Compiled from data provided by OSHA Office of Management Data Systems.

1. Figures in constant 1972 dollars.
2. Excludes record checks.
3. Figures are for first half of Fiscal Year.

ratio of remitted to proposed penalties suggests that, as the average proposed penalties declined dramatically, employers were less likely to contest inspections; this speculation is supported by the decline in the percentage of inspections contested.³⁰

Beginning in 1981, under Thorne Auchter, OSHA minimized confrontation with employers, and stressed the development of firms' own safety programs. The administration maintained that OSHA had overemphasized confrontational enforcement in the past, that OSHA ought to provide far more technical assistance, and that aggressive inspections turned firms against OSHA.³¹ OSHA's proposed penalties dropped precipitously; OSHA's regional and area office supervisors, for example, commonly reduced inspectors' initial penalty and citation levels.³²

30. The remitted/proposed penalty ratio understates significantly one type of mitigation that developed in 1981. That is, the field or area office supervisors of inspectors reportedly began reducing the penalties originally suggested by inspectors. The "proposed penalty" information forwarded to the national office would not reflect this type of mitigation. See P.J. SIMON, *REAGAN IN THE WORKPLACE: UNRAVELING THE HEALTH AND SAFETY NET 77-78* (1983) [hereinafter cited as SIMON].

31. O.S.H. REP. (BNA) 123 (July 8, 1982); O.S.H. (BNA) 206 (July 29, 1982); O.S.H. REP. (BNA) 436-37 (Oct. 13, 1983); 47 Fed. Reg. 29,025 (1982); 48 Fed. Reg. 54,546 (1983).

32. SIMON, *supra* note 30, at 38.

The centerpiece of the new regulatory policy was the encouragement of internal safety programs developed by management, or management and labor. OSHA offered to exempt a firm from routine inspections and to quickly process a firm's requests for a variance from a standard if the firm established a voluntary occupational safety and health program which was subject to review by OSHA.³³ The policy's logic was that firms would value relief from routine inspections and rapid variance processing so highly that they would institute safety or health programs that they otherwise would not establish. Participation in the first year of the program was relatively low,³⁴ but one year is insufficient time to evaluate the effort. Participation could increase as employers learned of the voluntary programs and of their requirements. Conversely, participation might not increase (and could even decline) if OSHA had devalued the inspection exemption by easing enforcement after 1981.³⁵

In general, OSHA's enforcement program was most aggressive in the 1977-1980 period, and, to a lesser extent, in the early 1970's. OSHA established many standards in the early 1970's, but its inspection program did not mature until the mid-1970's. In 1977-1980 OSHA coupled a fairly active standards development program (1977-1978) with its most aggressive inspections. After 1980, OSHA substantially diminished standards setting and confrontational inspections in favor of consultation with, and technical assistance for, employers.

III. OSHA-INDUCED CHANGES IN FIRMS: AN EVALUATION

Section I discussed the justifications for OSHA regulation—that is, that unregulated firms underinvest in injury-illness prevention because they can pass a large share of the costs of injuries and illnesses on to workers. Under this type of market failure, internal supporters of strong job safety and health programs will lack influence because they cannot argue persuasively that the firm would suffer financially if it underinvests in safety and health. Section II reviewed how OSHA tries to remedy the effects of market failure by specifying and enforcing safety and health standards in firms. The next sections examine the extent to which these pressures have affected firms in two areas; first, the involvement of workers in health-safety bargaining, and second, managerial decisionmaking on health and safety.

33. 47 Fed. Reg. 29,025 (1982); *see supra* note 8 and accompanying text.

34. SIMON, *supra* note 30, at 37.

35. O.S.H. REP. (BNA) 339-40 (Sept. 23, 1982); SIMON, *supra* note 30, at 38.

A. *Employee Involvement in Health-Safety Bargaining and Decisions*

Traditionally, management makes the key decisions on health and safety investments.³⁶ Although employees bear many of the costs of occupational injury and illness, their pressure for greater health and safety investments has been sporadic. Several factors limit workers negotiations over job safety and health. Although *safety* hazards are visible, workers have frequently not had information on many occupational *health* hazards. They have not been entitled to receive information on most hazards from employers, and obtaining information from outside sources was often expensive and difficult.³⁷ Even if hazards are recognized, workers will be reluctant to argue for major production or process changes if they risk being fired, or fear that the changes could bankrupt the firm.³⁸

Also, union leaders may be unwilling to spend a great deal of limited bargaining resources on health and safety issues when (1) the benefits of better conditions flow to a small number of young workers in particularly hazardous jobs, or (2) the benefits of the bargaining are intangible (e.g., a reduction in cancer rates among a firm's workers not recognizable for 15-20 years).³⁹ Also, unions who assume a greater role in health-safety programs run the risk of being sued by injured or ill workers for failing to remove particular hazards.⁴⁰ Successful suits of this type, though few,⁴¹ have inhibited some union locals from bargaining vigorously for greater roles in health-safety decisionmaking.⁴²

B. *The Basis of Increased Employee Involvement in OSH Bargaining*

Recognizing these limits on bargaining, there is nevertheless a strong theme running through the writings, meetings, and statements on OSHA policy that employees *increased* their involvement in health-safety matters substantially after the early 1970's.⁴³ The

36. O.S.H. REP. (BNA) 1411 (Apr. 9, 1981); BACOW, *supra* note 5, at 93.

37. MCCAFFREY, *supra* note 13, § 3.2.4.2, at 51; *Need for Hazardous Identification Standard* 46 Fed. Reg. 4413 (1981).

38. MCCAFFREY, *supra* note 13, § 3.2.2.1, at 43; BACOW, *supra* note 5, at 89.

39. BACOW, *supra* note 5, at 94.

40. O.S.H. REP. (BNA) 725 (Feb. 4, 1982); Drapkin & Davis, *Health and Safety Provisions in Union Contracts*, 65 MINN. L. REV. 635 (1981) [hereinafter cited as Drapkin & Davis].

41. *See, e.g., Helton v. Hake*, 564 S.W.2d 313 (Mo. Ct. App.), *cert. denied*, 439 U.S. 959 (1978); *Dunbar v. United Steelworkers of Am.*, 100 Idaho 523, 602 P.2d 21 (1979), *cert. denied*, 446 U.S. 983 (1980); Drapkin & Davis, *supra* note 40, at 647-52.

42. BACOW, *supra* note 5, at 97; *see supra* note 40, and references therein.

43. *See, e.g., O.S.H. REP. (BNA) 978-79* (Apr. 21, 1983); O.S.H. REP. (BNA) 427 (Oct. 28, 1982); O.S.H. REP. (BNA) 1411 (Apr. 9, 1981); O.S.H. REP. (BNA) 977 (Jan.

Occupational Safety and Health Act arguably increased workers' willingness and resources to deal with safety-health issues in two respects. First, the Act increased greatly the amount of public information on safety and health hazards, and ways to control them. Workers acquired this information through unions, the media, and other channels. Second, the Act gave workers the right to call in OSHA, and/or the National Institute for Occupational Safety and Health (NIOSH) from within the Department of Health and Human Services, to examine specific conditions in their workplace.⁴⁴ This shifted the bargaining situation from one in which managers confronted workers alone to one in which managers confronted workers who had the right to call in outside inspectors and get virtually free technical help.

1. *Information on Health-Safety Problems.*—The Occupational Safety and Health Act increased the amount of publicly available information on safety and health hazards and control technology. OSHA and NIOSH fund a great deal of research on occupational safety and health issues.⁴⁵ Also, OSHA and NIOSH have turned into centers of debate on safety and health policy, and these debates have to be conducted in the open.⁴⁶ Thus, there has been a great increase in the amount of information available on health and safety hazards, and on ways to control these hazards.

Workers acquire information through a loose process that usually involves some combination of the media, researchers hired by management, management, government agencies, unions, and labels on toxic substances.⁴⁷ The Occupational Safety and Health Act also mandates that OSHA and NIOSH distribute information.⁴⁸ OSHA's post-1971 toxic substance regulations typically require that workers be given information on hazards,⁴⁹ and OSHA has issued a regulation requiring identification of hazardous chemical substances.⁵⁰

As noted earlier, the lack of information about hazards, or the cost of the information, has impeded workers' involvement in health-safety decisions. The relative increase in the availability of

16, 1975); A. FREEDMAN, *INDUSTRY RESPONSE TO HEALTH RISK* 46 (1981) [hereinafter cited as FREEDMAN]; UNITED STATES DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS, *MAJOR COLLECTIVE BARGAINING AGREEMENTS: SAFETY AND HEALTH PROVISIONS* (1976).

44. 29 U.S.C. §§ 657(f), 660(c), 669(a)(6) (1976).

45. *Id.* §§ 657(c) (g), 669, 673.

46. *Id.* §§ 655-57.

47. McCaffrey, *supra* note 13, at 31-33, 40-61, and references therein.

48. 29 U.S.C. §§ 657(g), 673 (1976).

49. For a listing of the provisions, see 29 C.F.R. § 1910.1000 (1983).

50. 48 Fed. Reg. 53,280 (1983) (to be codified at 29 C.F.R. § 1900.1200).

low-cost information presumably ought to have increased workers' health-safety activities.

2. *Direct Government Assistance: Complaint Inspections and Health Hazard Evaluations.*—The Occupational Safety and Health Act gives individuals the right to request inspections of specific hazards, and requires OSHA to inspect the firm unless OSHA sees no reasonable grounds to believe that violation of a standard or other danger exists. The complainant remains anonymous, and if the complainant's identity is discovered the employer cannot legally retaliate.⁵¹ In the mid-1970's both the AFL-CIO and OSHA publicized the right of employees to request inspections, leading to a substantial increase in the number of complaints and complaint inspections (See Table II).⁵²

The complaint right increases workers' influence in health-safety issues in two respects. First, a complaint inspection brings OSHA directly into a labor-management dispute over an alleged hazard, increasing the pressure on the employer to resolve the dispute. The significance of the additional pressure has varied as OSHA increased and then lowered its support of complaint inspections (See Table II). However, the impact of a complaint inspection is probably never trivial.

Second, employees have been able to use the *threat* of a complaint to OSHA as a bargaining chip in health-safety disputes. Once workers tell managers that they will "call in OSHA" if a condition is not remedied, the chance that managers will take the workers' requests seriously is increased. Unions, in particular, have used this tactic effectively.⁵³

In addition to giving individuals the right to request OSHA inspections, the Occupational Safety and Health Act gave individuals the right to request Health Hazard Evaluations (HHE's). Upon request from an employee or employer, the Act requires the National Institute for Occupational Safety and Health to determine if a substance normally present in a workplace has toxic effects in the concentrations in which it is found.⁵⁴ An Urban Systems study of 180 HHE's conducted between 1976 and 1978 found that about two-thirds of the requests for Health Hazard Evaluations came from workers, and that about ninety percent (90%) of the employee requests came from union representatives.⁵⁵ Following criticism that

51. 29 U.S.C. § 657(f) (1976).

52. See McCAFFREY, *supra* note 13, § 7.3, at 149 and references therein.

53. BACOW, *supra* note 5, at 97, 108.

54. 29 U.S.C. § 669(a)(6) (1976).

55. URBAN SYSTEMS RESEARCH & ENGINEERING, INC., AN EVALUATION OF THE EFFECTIVENESS OF NIOSH'S HEALTH HAZARD EVALUATION PROGRAM. PREPARED FOR: NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH 19 (1979).

TABLE II
COMPLAINT INSPECTION AND HEALTH HAZARD
EVALUATION (HHE) ACTIVITY, FY 1973-1983

Fiscal Year	Complaint Inspections		Health Hazard Evaluations	
	Number Conducted	Percent of Inspections	Requests Received	Evaluations Conducted
1973	6,623	13.7%	152	80
1974	6,409	8.3	190	60
1975	7,139	8.8	170	90
1976	9,160	10.1	200	160
1977	19,270	32.2	190	160
1978	21,485	37.6	210	140
1979	20,158	34.8	230	140
1980	16,093	25.4	429	192
1981	13,448	23.5	513	234
1982	6,761	11.0	423	496 ¹
1983 ²	2,864	8.9%	N.A.	N.A.

SOURCE: Compiled from data provided by OSHA Office of Management Data Systems and National Institute for Occupational Safety and Health.

1. Includes evaluations requested in earlier years.
2. Data are for first half of fiscal year.

OSHA had inadequately publicized the Health Hazard Evaluation program, and after appointment of Anthony Robbins in 1979 as Institute Director, NIOSH expanded the program.⁵⁶

Historically, workers have not generally bargained strongly on occupational and safety health issues and the limits on bargaining persist. OSHA has, however, arguably loosened these limits significantly. The increase in low-cost information on hazards and control technology, as well as the rights to request OSHA inspections and NIOSH health hazard evaluations, could increase workers' willingness and ability to engage employers directly on health and safety issues. The new information and inspection rights could increase *willingness* because they identify previously unknown or ill-defined hazards. They increase *ability* because they lower the costs of pressure on employers. Workers find that useful information is more freely available, and that OSHA and NIOSH can be called on to exert pressure that previously had to be exerted solely by the workers.

56. UNITED STATES GENERAL ACCOUNTING OFFICE, HEALTH HAZARD EVALUATION PROGRAM NEEDS IMPROVEMENT (1978); McCaffrey, *supra* note 13, § 7.2, at 146.

C. *The Significance of Increased Employee Involvement*

The argument that workers' bargaining over safety and health is significantly stronger today than in the early 1970's is plausible, and noted repeatedly. Yet, data on OSHA's inspection policies and on collective bargaining agreements offer only mixed support for the assertion.

New employee strength based on the right to request OSHA inspections or Health Hazard Evaluations is fragile. As Table II indicates, OSHA's support of complaint inspections grew after 1976, but then dropped precipitously after 1981. NIOSH's Health Hazard Evaluation program grew after 1979, but the program is still relatively small. (Compare, for example, the number of Health Hazard Evaluations conducted to the number of complaint inspections, even in 1982).

Most striking is the relative lack of change in collective bargaining agreements between 1975 and 1980. The Bureau of Labor Statistics conducts a survey of provisions in collective bargaining agreements at five year intervals. Data from the different surveys are not precisely comparable, as agreements may appear in one survey but not in another.⁵⁷ However, year to year comparisons indicate the approximate changes in the frequency of provisions. Three provisions that ought to have appeared more frequently in recent years, if workers were more involved in health-safety bargaining, are (1) a right to refuse hazardous work, (2) a right for union committees to inspect and investigate hazards, either alone or jointly with management; and (3) pledges of cooperative union-management safety programs. Table III compares the 1975 and 1980 figures on these provisions in eleven manufacturing industries.⁵⁸ The figures represent the percentage of collective bargaining *agreements* in the industries with the provisions, and the percentages of *workers covered* by collective bargaining agreements in the industry that has the provisions.

Table III suggests that (1) a minority of agreements have the provisions, particularly the right to refuse hazardous work and the right of inspection; (2) a minority of workers are covered by the provisions; and (3) there was relatively little change in either the

57. UNITED STATES DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS, CHARACTERISTICS OF MAJOR COLLECTIVE BARGAINING AGREEMENTS, JULY 1, 1975 27 (1977); UNITED STATES DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS, CHARACTERISTICS OF MAJOR COLLECTIVE BARGAINING AGREEMENTS, JANUARY 1, 1980, 35 (1981).

58. Using data from a McGraw-Hill survey, a later section examines industries' investment in safety and health related capital. To maintain comparability, Tables III, IV, and V in this Article are limited primarily to the industries covered by the McGraw-Hill survey.

frequency or coverage of provisions between 1975 and 1980. In only one industry—stone, clay, and glass products—was there a substantial, consistent increase in the number of agreements which contained the provisions, and in the number of workers covered by the provisions. (This industry includes asbestos manufacturing, an industry with the most highly publicized health hazard of the last twenty years. There probably was a spillover of concern from the asbestos industry to related firms in the stone, clay, and glass category). Even in the stone, clay, and glass industry, only one-quarter to one-third of the agreements contained the provisions, and twenty-five to forty-two percent of the workers in the industry were covered by them.

There are exceptions to this pattern. Some of the provisions were common in some industries already in 1975 (e.g., in the rubber and plastics, and primary metals industries) and there were some increases (and declines) in the frequency of provisions scattered across industries between 1975 and 1980. Yet, in general, the coverage is far more limited and far more stable than one would expect if there had been a surge of employee bargaining and involvement in occupational health and safety issues in the 1970's.

Overall, the available data does not support the impression that employee bargaining over job safety and health has increased substantially in the last decade. The availability of information, and the rights to inspections and Health Hazard Evaluations under the Occupational Safety and Health Act, probably increased worker awareness of health and safety hazards and workers' leverage with management only marginally. Even during OSHA's most active regulatory period (1977-1980) the frequency of safety and health provisions in collective bargaining agreements was relatively stable. There have been some changes, but their significance should not be overstated.

It would be premature to conclude that, overall, firms still tend to underinvest in employee safety and health. There have reportedly been extensive changes in *managerial* decisionmaking that lead firms to pay far greater attention to occupational safety and health than in earlier years.

IV. MANAGERIAL ATTENTION TO HEALTH-SAFETY ISSUES

A. *The Growth of Firms' Health-Safety Programs*

Another theme running through the writings, conferences, and statements on OSHA is that the managerial staff specializing in occupational health and safety has increased greatly since the early 1970's. These staffs, above the plant level in multi-plant corporations, monitor hazards in plants, keep track of health and safety

TABLE III
HEALTH-SAFETY PROVISIONS IN COLLECTIVE BARGAINING
AGREEMENTS, 1975 AND 1980

Industry	Total Agreements Examined		Right to Refuse Unsafe Work		Right of Inspection		Union/ employer cooperation pledge	
	1975	1980	1975	1980	1975	1980	1975	1980
Food	105	79	6.7%	3.8%	7.6%	19.0%	16.1%	24.0%
Agreements Workers	293,550	234,200	5.4%	3.8%	7.2%	15.8%	15.0%	16.9%
Paper	53	42	7.5	7.1	11.3	11.9	41.5	38.1
Agreements Workers	101,600	65,000	9.9	8.1	12.4	12.7	46.0	39.5
Chemicals	47	36	12.8	5.6	34.0	22.2	61.7	52.8
Agreements Workers	108,750	61,700	7.4	3.6	19.6	17.5	50.7	45.6
Petroleum	13	15	30.8	26.7	61.5	66.7	38.5	46.7
Agreements Workers	25,000	25,500	29.0	24.1	49.4	74.1	25.6	50.0
Rubber, Plastics	19	14	10.5	7.1	78.9	78.6	52.6	50.0
Agreements Workers	94,950	68,850	26.3	1.7	94.8	86.9	82.6	43.9
Stone, Clay, Glass	29	35	6.9	34.3	10.3	25.7	31.0	37.1
Agreements Workers	70,750	93,600	4.5	42.4	7.0	33.6	27.2	25.0
Primary Metals	84	88	44.0	45.4	40.5	39.8	55.9	55.7
Agreements Workers	492,000	460,000	73.8	74.7	63.3	59.5	68.2	68.0
Fabct'd. Metals	32	41	28.1	29.3	31.2	34.1	28.1	46.3
Agreements Workers	85,500	97,000	35.6	41.4	49.6	40.6	15.8	39.4
Machinery	90	81	20.0	18.5	41.1	43.2	40.0	45.7
Agreements Workers	278,950	242,150	25.1	22.6	44.4	50.2	46.4	52.3

TABLE III
CONTINUED

Industry	Total Agreements Examined		Right to Refuse Unsafe Work		Right of Inspection		Union/ employer cooperation pledged	
	1975	1980	1975	1980	1975	1980	1975	1980
Elec. Machinery	95	83	10.5	8.4	11.6	22.9	27.4	22.9
	437,550	323,750	10.5	8.1	12.4	18.3	19.2	21.9
Trans. Equip't.	84	112	23.8%	21.4%	29.8%	31.2%	35.7%	34.8%
	1,058,300	957,100	24.2%	8.4%	76.3%	74.5%	78.3%	73.8%

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Characteristics of Major Collective Bargaining Agreements, 1975 and 1980 volumes.

performance, and keep up with regulatory requirements.⁵⁹ They have established new information systems to record data on hazards, occupational safety and health performance, and regulation in the firms. Several large chemical firms have established their own occupational safety and health data systems, and many smaller firms are reportedly participating in cooperative record keeping systems.⁶⁰

The corporate health-safety staff can point out—in fact, it is their purpose to point out—how certain operations, or changes in processes or equipment, might violate OSHA regulations or produce health-safety problems. A 1981 Conference Board survey on corporate decisionmaking changes quoted one executive who spoke of a “counterbureaucracy—a cadre of specialists whose knowledge, training, and narrow responsibilities are characteristic of the regulators themselves.” The report suggested that “operations people” had initially resisted the specialists’ involvement, but now commonly recognize the need to consider the regulatory impact of production decisions.⁶¹

The Conference Board survey also asked 354 firms how the presence of occupational safety and health regulations had affected decisionmaking authority within the company in different respects. Twenty-three percent reported that related decisions had moved to a higher level in the company; forty-nine percent said that the number of departments involved in decisions had increased; and fifty percent said that the company had more administrative constraints on related decisions.⁶²

Numerous analysts, who are troubled by corporate failures in health-safety work, point out that government regulators are not able to design standards that recognize important differences between firms, and are unable to monitor firms’ behavior sufficiently closely to prevent health-safety problems. These analysts argue that structural changes such as the new health-safety staffs ought to be encouraged. The changes establish agents within the corporation who have occupational interests in arguing forcefully for attention to health and safety, and the resources—such as information and access to higher levels in the firm—to present their cases.⁶³ In ef-

59. FREEDMAN, *supra* note 43; E.D. MCGUIRE, *THE PRODUCT SAFETY FUNCTION: ORGANIZATION AND OPERATIONS* (1979); R. BERENBEIM, *REGULATION: ITS IMPACT ON DECISION MAKING* (1981) [hereinafter cited as BERENBEIM]; BARDACH & KAGAN, *supra* note 5, at 95; *Chemical Week*, Jan. 13, 1982, at 40-41; Mar. 3, 1982, at 37; June 16, 1982, at 40; O.S.H. (BNA) 427-28 (Oct. 28, 1982).

60. *Business Week*, Mar. 21, 1983 at 142D; FREEDMAN, *supra* note 43, at 22.

61. BERENBEIM, *supra* note 59, at 18-19; *see also*, *Chemical Week*, Feb. 10, 1982, at 28.

62. BERENBEIM, *supra* note 59, at 12.

63. *See supra* note 59.

fect, the changes arguably are a direct organizational correction of the "market failure" justifying regulation in the first place—namely a lack of organizational attention to health and safety.

Some firms, particularly those involved in well-publicized "epidemics" of occupational illnesses, or other environmental "disasters," clearly increased their attention to health and safety in the 1970's.⁶⁴ However, two important issues remain: (1) the proportion of firms that have changed in this way, and (2) whether the influence of health-safety staff depends heavily on the possibility of active government regulation and consequent de-emphasis of direct regulation would undermine their influence, or alternatively, whether their influence now operates relatively independently of direct government regulation.

B. The Significance and Stability of Managerial Changes

The evidence that firms in general substantially increased their attention to health and safety in the last decade is, in fact, quite limited. Most of the evidence consists of descriptions of individual programs, that might in fact have existed well before OSHA; descriptions of *new* programs, that might in fact be few in number; or assertions that most firms have to consider health and safety issues far more now than in the past, which might in fact be untrue.

The best evidence documenting greater overall corporate attention to health and safety is the Conference Board survey on decisionmaking changes in response to regulation.⁶⁵ But, despite its considerable value, the Conference Board report is methodologically and substantively ambiguous in important respects. *Methodologically*, the Conference Board report gives no reason to believe that the surveyed firms comprise a sample from which one could draw general conclusions. The study mentions that 401 companies returned the questionnaire, but does not discuss how the original sampling frame was selected, nor even the sampling frame's size. At the outset, then, the report's results are interesting but not subject to generalization. *Substantively*, the Conference Board results,⁶⁶ refer to centralization of authority, additional administrative constraints, and an increase in the number of departments involved in decisions. But the study did not examine how these shifts affected the level of resources devoted to health and safety by firms, nor how stable the shifts were. (These issues were beyond the scope of the survey).

To assess the proportion of firms with developed occupational

64. *Chemical Week*, Mar. 3, 1982, at 37.

65. BERENBEIM, *supra* note 59.

66. See *supra* note 62 and accompanying text.

health and safety efforts, and the stability of the resources devoted to health and safety, two types of data are examined below: information on firms' occupational medical programs for 1975 and 1977, and on industries' capital expenditures for employee safety and health 1972-1982. Neither type of information, nor even the two together, address the issues definitively. However, the two types of information are the best available, and using other data would not change the results significantly.⁶⁷

1. *Occupational Health Programs.*—As noted above, the number of firms with occupational health programs reportedly increased in the last decade. First, we examine the frequency with which firms in eleven manufacturing industries provided elementary occupational health activities in 1975 and 1977; subsequently, the *trend of capital expenditures* on health and safety is explored.

In its surveys of occupational injuries and illnesses for 1975 to 1977, the Bureau of Labor Statistics asked firms whether they provided different types of occupational medical services.⁶⁸ Table IV was prepared using a file of 19,290 firms; each of the firms participated in the BLS survey in each year from 1975 to 1977. Table IV gives the percentage of firms providing three types of occupational health services for 1975 and 1977: periodic general medical examinations, periodic medical surveillance examinations, and post-injury or illness examinations.⁶⁹ These basic services are the foundations of exposure monitoring systems, record keeping systems, and other elements of comprehensive occupational health programs and therefore, would likely be established before comprehensive programs.⁷⁰ Thus, figures in Table IV represent an upper boundary on firms providing occupational health programs in the year, and the percentage of firms with comprehensive programs was probably appreciably lower.

67. See D.P. McCaffrey, AN ASSESSMENT OF OSHA'S RECENT EFFECTS ON INJURY RATES AND HAZARD PREVENTION WORK: REPORT TO THE NATIONAL SCIENCE FOUNDATION 46 (1982).

68. UNITED STATES DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS, OCCUPATIONAL INJURIES AND ILLNESSES IN THE UNITED STATES BY INDUSTRY, 1975 at 8 (1978); UNITED STATES DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS, OCCUPATIONAL INJURIES AND ILLNESSES IN THE UNITED STATES BY INDUSTRY, 1977 at 7 (1980).

69. Medical surveillance examination monitor employees for specific symptoms associated with substances or tasks on their jobs. Post-injury or illness examinations refer to examinations given to workers after their return from a lost-time occupational injury or illness.

70. AOMA Medical Information Systems Committee, *Utilization of Medical Information Systems in American Occupational Medicine*, 19 J. OF OCCUPATIONAL MED. 819 (1977); O.S.H. REP. (BNA) 436 (Oct. 13, 1983); 48 Fed. Reg. 54,546 (1983), *supra* note 8.

TABLE IV
 PERCENTAGES OF FIRMS PROVIDING MEDICAL
 EXAMINATIONS, 1975-1977

Industry (N of Firms)	Periodic	General	Periodic	Surveillance	Post-Injury- or Illness	
	1975	1977	1975	1977	1975	1977
Food (3,265)	15.3%	16.5%	6.6%	7.7%	25.8%	27.2%
Paper (1,174)	15.5	14.7	9.1	13.5	38.8	40.8
Chemicals (1,227)	39.8	43.5	33.4	39.1	51.3	54.0
Petroleum and coal (256)	31.3	33.6	33.6	37.5	41.8	45.3
Rubber (937)	11.2	12.6	13.0	15.3	31.4	33.8
Stone, clay, glass (1,778)	12.7	14.9	12.4	15.1	26.5	28.1
Primary metal (1,330)	21.1	23.2	22.9	28.3	43.2	48.7
Fabcted. metal (3,479)	8.0	10.5	10.3	12.0	27.3	29.3
Machinery (3,215)	9.4	10.6	9.6	11.4	25.5	27.0
Electrical equipment (1,510)	16.6	18.3	20.1	22.8	34.0	32.5
Transptn. equipment (1,119)	19.0%	18.9%	24.8%	29.0%	41.8%	41.0%

SOURCE: Compiled from data provided by U.S. Department of Labor, Bureau of Labor Statistics.

The percentages of firms in most industries providing *periodic general medical examinations* and *medical surveillance* examinations, were about ten to twenty percent. The figures for chemical, petroleum and coal products industries, were about thirty-four percent for both types of examinations. The figures for periodic medical surveillance examinations in primary metals and transportation equipment were twenty-three to thirty percent. One-quarter to one-third of firms examined workers after a *lost-time injury or illness*; chemicals, petroleum and coal, primary metals, and transportation equipment industries providing the examinations somewhat more frequently than other industries. Generally, larger percentages of

firms provided the examinations in 1977 than in 1975, but the increases were quite small.

Thus, in 1977, a minority of firms had these basic occupational health activities. A few industries conducted the examinations more frequently than others, but even in these industries a minority of firms did so. It should be kept in mind that these examinations are very elementary services, and do not represent what would be considered developed occupational health and safety programs.⁷¹

The number of firms providing the occupational health services since 1977 may have increased significantly. Unfortunately, the BLS stopped collecting these data in 1977, and there is no comparable survey of occupational health services extending to the present time.

2. *Health-Safety Capital Expenditures.*—One survey that does go to the present is the McGraw-Hill survey of capital expenditures related to employee safety and health.⁷² The Arthur Andersen study of forty-eight firms' OSHA-related costs reported that thirty-seven percent of the costs were capital costs. Fifty-six percent of the costs were operating and administrative costs,⁷³ a large share of which would presumably be associated with the firms' capital equipment. Thus, trends in capital costs probably indicate reasonably well the *direction* of occupational safety and health related expenses in general. If firms increased their capital spending in the post-1977 period, overall resources committed to safety and health likely increased as well, and the number of firms with strong health-safety programs would have likely increased. If expenditures remained stable or declined since 1977, there would be reason to question the claim that the number of firms with strong safety and health programs increased appreciably since that time.

Table V above gives the capital expenditures on employee safety and health, in constant dollars, and the expenditures as a percent of total capital expenditures, for eleven manufacturing industries, 1972 to 1982.

In general, as measured by the proportion of capital expenditures devoted to safety and health, 1972 to 1976 was the period of heavi-

71. AOMA Medical Information Systems Committee, *Utilization of Medical Information Systems in American Occupational Medicine*, 19 J. OF OCCUPATIONAL MED. 819 (1977); O.S.H. REP. (BNA) 436 (Oct. 13, 1983); 48 Fed. Reg. 54,546 (1983), *supra* note 8.

72. MCGRAW-HILL PUBLICATIONS ECONOMICS DEPARTMENT, 11TH ANNUAL MCGRAW-HILL SURVEY OF INVESTMENT IN EMPLOYEE SAFETY AND HEALTH (1983) [hereinafter cited as SURVEY].

73. ARTHUR ANDERSEN AND COMPANY, COST OF GOVERNMENT REGULATION: STUDY FOR THE BUSINESS ROUNDTABLE REPORT 8-5 (1979).

TABLE V
CAPITAL EXPENDITURES FOR EMPLOYEE SAFETY AND
HEALTH, YEARLY AVERAGES OF CONSTANT
1972 DOLLARS (MILLIONS) AND OF
PERCENTAGE OF TOTAL CAPITAL INVESTMENT, 1972-1982

Industry	1972-1976	1977-1980	1981-1982
Food	\$98 2.9%	\$94 2.6%	\$95 2.4%
Paper	50 2.5%	43 1.5%	71 2.4%
Chemicals	131 2.6%	195 3.4%	263 4.1%
Petroleum	131 2.2%	148 1.7%	136 1.1%
Rubber	46 4.0%	36 3.7%	29 3.4%
Stone, clay, glass	58 4.3%	54 3.0%	22 1.5%
Primary metals	130 4.7%	51 1.7%	89 2.9%
Fabricated metals	27 1.7%	50 3.0%	34 2.5%
Machinery	110 2.9%	138 2.7%	43 .7%
Electrical equipment	\$68 2.4%	\$79 2.1%	\$76 1.5%

SOURCE: Compiled from data reported in 11th Annual McGraw-Hill Survey of Investment in Employee Safety and Health.

est occupational safety and health related investment. In most industries there were *relative* declines in expenditures since that period, although the *absolute amount* of expenditures may not have declined appreciably. There are a few exceptions, with the most notable being the large absolute and relative increases in such expenditures in the chemical industry.

The McGraw-Hill report for 1983 indicated that the relative decline in expenditures could be attributed to the slowing of OSHA's regulatory activities. The current expenditures, noted the report, are:

substantially lower than the share of spending allocated to employee safety and health during the 1970's. . . . Relatively few new safety and health standards have been proposed in recent years and most companies have already complied with existing regulations. As a result, the trend toward a lower share of capi-

tal spending going to safety and health is expected to continue.⁷⁴

The pattern of capital spending suggests that OSHA's regulatory program does tend to produce increases or decreases in firms' occupational safety and health activities. The pattern of capital spending also leads one to question the claim that far more firms have strong health and safety programs at present than in the mid-1970's. It is difficult to believe that firms would be rapidly expanding expenditures on internal safety and health programs as they were diminishing capital expenditures on safety and health. Perhaps some firms, particularly those that experience dramatic health-safety failures, established or expanded programs. Also, firms in the chemical industry are particularly likely to invest in health and safety programs. But it would be wrong to conclude from these cases that there has been a general, significant increase in attention to health and safety issues.

CONCLUSION

Reportedly, it is time for regulatory policy to recognize and draw on the increased managerial and worker activity on health and safety matters which has developed over the last decade. OSHA's role in this decentralized regulation should be to provide technical assistance to firms setting up and maintaining safety programs, and to regulate firms directly when they do not develop sound health and safety programs.⁷⁵

In principal, the case for reorienting occupational health and safety regulation in this way is strong. Assuring that firms have strong internal incentives to maintain health and safety is preferable to uniform regulation of health and safety activities. Uniform regulation may be necessary if firms do underinvest in health and safety, but it is only a second best solution to the problem.⁷⁶ However, this Article has suggested that the *practical* foundation of a decentralized regulatory system is weaker than is commonly recognized, and that the current easing of direct regulatory pressures in fact contradicts the efforts to strengthen the foundation.

Collective bargaining agreements suggest that employees' involvement in health-safety bargaining and decisionmaking is relatively limited, and has not increased substantially since the mid-1970's. Yet the frequency of health-safety provisions in collective bargaining agreements likely represents the upper limits of worker involvement, since non-unionized workers are less able to influence

74. SURVEY, *supra* note 72, at 2.

75. See *supra* note 8.

76. See *supra* notes 5-8; see generally C.L. SCHULTZE, *THE PUBLIC USE OF PRIVATE INTEREST* (1977).

health-safety decisions in firms. Furthermore, in the early 1980's, OSHA diminished employees' resources in health-safety bargaining by curtailing complaint inspections and reducing standards-setting activities. It is reasonable to expect that workers' ability to influence health and safety decisions will actually decline in the 1980's.⁷⁷

Similarly, the evidence that managers attend more extensively to health-safety issues now than in the early 1970's is mixed at best. Most of the evidence is anecdotal, and not generalizable or well-documented. The most impressive study on the subject—the Conference Board survey on regulation—induced decisionmaking changes—is methodologically and substantively ambiguous. Other evidence directly conflicts with the view; the Bureau of Labor Statistics survey on occupational health activities in 1975 and 1977 suggested that a minority of firms conducted elementary occupational health activities.⁷⁸

The Occupational Safety and Health Administration in the early 1980's announced that it would encourage firms to significantly improve their occupational health and safety programs. It offered exemptions from routine inspections to induce firms to participate.⁷⁹ Yet, simultaneously, OSHA diminished standards setting activities significantly and eased the pressures of inspections on firms generally.⁸⁰ It is too early to evaluate definitively how firms will respond to OSHA's regulatory policies since 1981. However, there is no a priori reason to believe that a large number of firms will upgrade their health and safety programs in a period of regulatory retrenchment. The McGraw-Hill survey reported that the relative shares of health-safety capital expenditures declined in the 1980's—the chemical industry being a notable exception—and that the relative reduction could be attributed to a slowing of OSHA's regulatory activities.⁸¹ Some recent anecdotal evidence is consistent with this relative decline. In 1982, an industry consultant discussed “ ‘the growing perception in the business community’ that safety and health is a corporate activity in which cuts can be made with risk,” and four firms dismissed senior health officials.⁸²

The Occupational Safety and Health Administration could successfully encourage the development of strong health and safety programs if it gave firms meaningful incentives to establish them. OSHA acknowledged as much by making exemptions from routine

77. See *supra* notes 57-58 and accompanying text.

78. See *supra* notes 65-71 and accompanying text.

79. 47 Fed. Reg. 29,025 (1982); 48 Fed. Reg. 54,546 (1983); see *supra* note 8.

80. See *supra* notes 28-35 and accompanying text.

81. See *supra* notes 72-74 and accompanying text.

82. O.S.H. REP. (BNA) 339 (Sept. 23, 1982); O.S.H. REP. (BNA) 90 (June 24, 1982).

inspections contingent on program establishment. The problem is that OSHA has devalued the inspection exemption by curtailing the force of the inspection and standards setting program. A successful effort to decentralize health and safety regulation will recognize the benefits of private health and safety programs, but also recognize that firms change when it is in their interest to do so. The effort will be informed by both principles, rather than uncritical endorsement of one to the exclusion of the other.