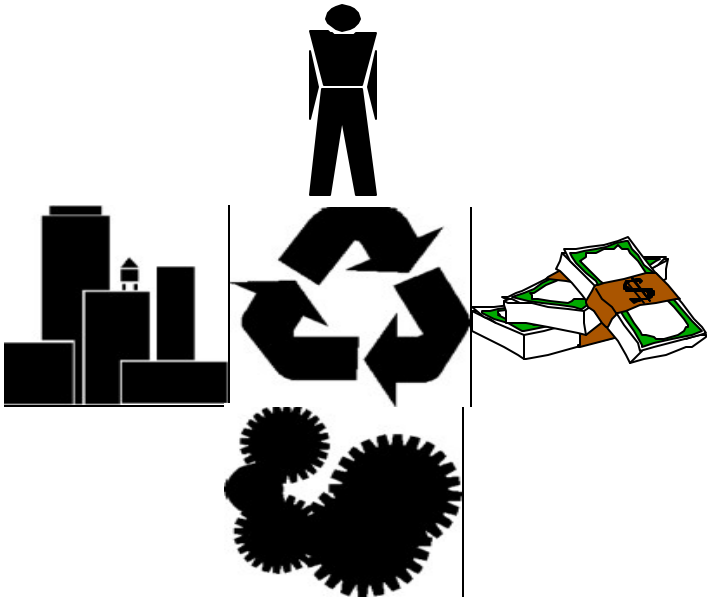
MANAGING WORKER SAFETY & HEALTH



MANAGING WORKER SAFETY AND HEALTH

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FORWARD

This booklet along with safety and health consultation services are provided at no cost to owners, proprietors, and managers of small businesses by the Illinois Onsite Consultation Service, under a program funded largely by the Occupational Safety and Health Administration (OSHA), an agency of the U.S. Department of Labor. The service is provided without penalty or citations to any employer who requests consultation.

Managing Worker Safety and Health explains OSHA's safety and health program management guidelines: what they mean and how to carry out each element and their components into a safety and health program appropriate for your worksite. This manual was developed by the U.S. Department of Labor, Occupational Safety and Health Administration, Office of Cooperative Programs.
You are not expected to set up a complete program all at once. This publication allows you to work on each program component individually if you so choose. We are confident you can develop a worksite safety and health program that protects your employees while conforming to the recommendations of the guidelines.

We have consciously packaged this document for ease in copying and handling. Make copies of relevant chapters for the employees that will be involved in developing your program. By encouraging e mployee involvement in your program's design and development, you will reap the benefits of your workers' valuable ideas and their all-important support.

We hope you will begin using this information immediately to develop a safety and health program that protects your employees from injuries and illnesses, reduces workers' compensation costs, improves employee morale, and increases worksite productivity. Worksites across the nation have experienced this type of success by basing their programs on the principles discussed in Managing Worker Safety and Health. A quality safety and health program is one of the major keys to business survival and individual well-being as we approach the 21st century.

1.

CHAPTER I

INTRODUCING OSHA'S SAFETY AND HEALTH PROGRAM MANAGEMENT GUIDELINES

INTRODUCTION

How can you increase worker protection, cut business costs, enhance productivity, and improve employee morale?

There are many ways you, as a business owner or manager, can approach this challenge. One way is by doing a better job of managing your company's safety and health program.

No matter how sophisticated your safety and health efforts, they can always be improved. No matter how small your worksite, systematic methods for protecting workers can work for you.

Effective management is the key to reducing the numbers and severity of workplace injuries and illnesses. This means using proven methods to find and understand existing and potential hazards, and then either preventing or controlling those hazards. A direct relationship exists between effective management and low numbers and severity of injuries. We also credit good management with lower levels of work-related illness: a well-managed safety and health program prevents or controls employee exposure to toxic substances or other unhealthful conditions that can cause sickness.

The Safety and Health Program Management Guidelines, published in the Federal Register (54 CFR 3908) on January 26, 1989, were developed from the safety and health program elements used by the state-run onsite consultation services which are geared toward small and medium-sized businesses, and from the Voluntary Protection Program (VPP) requirements which is geared toward large businesses.

Recommendations in the Guidelines work! Although the recommendations are not mandatory, we urge all employers in all industries to adopt these management practices. With the help of the Guidelines, we are confident that any company can establish a successful safety and health program.

This chapter briefly reviews each section of the Guidelines and the benefits you can expect from carrying out its recommendations. We will be referring to subsequent chapters for more detailed explanations of how to carry out the recommendations. Many of the following chapters include tools useful in initiating or improving management systems for worker protection. The information which is presented is intended for the full spectrum of large and small industry worksites and is not dependent on any particular management style.

THE GUIDELINES

The Guidelines outline a management program whose purpose is to accomplish the following: to recognize and understand all the hazards and potential hazards of the workplace; to prevent or control those hazards; and to train employees at all levels so they understand the potential hazards they may be exposed to and know how to help protect themselves and others. To accomplish this, the Guidelines are divided into four parts called major elements:

- **Management Leadership and Employee Involvement**
- **Worksite Analysis**
- **Hazard Prevention and Control**
- **Safety and Health Training**.

Each element is further divided in several recommended actions. See Appendix 1-3 for worksheets that address these elements.

MANAGEMENT LEADERSHIP AND EMPLOYEE INVOLVEMENT

This element describes the leadership that management provides to encourage employee involvement at all levels in safety and health protection. Many actions listed under this element are applicable to all areas of business management. The Guidelines simply put them to use in improving worker safety and health protection. The actions cover:

- **Safety and Health Policy,**
- **Goal and Objectives,**
- **Visible Top Management Leadership,**
- **Employee Involvement,**
- **Assignment of Responsibility,**
- **Provision of Adequate Authority and Resources,**
- **Accountability, and**
- **Program Evaluation**.

These actions can be visualized as a management "circle":

<u>SAFETY AND HEALTH POLICY</u>. By developing a clear statement of management policy, you help everyone involved with the worksite understand the importance of safety and health protection in relation to other organizational values. By clearly communicating the policy to all employees, you ensure that no confusion will exist when a conflict arises between two of these values, such as productivity and safety or health. Here is the language of the Guidelines that describes this desired action:

> ***state clearly a worksite policy on safety and healthful work and working conditions, so that all personnel with responsibility at the site and personnel at other locations with responsibility for the site understand the priority of safety and health protection in relation to other organizational values.***

For information on and samples of worksite safety and health policies, see Chapter 2.

GOAL AND OBJECTIVES. You make your general safety and health policy specific by establishing a clear goal and objectives for your program. These set the framework for assigning responsibility. Each employee should be able to see his/her work activities in terms of moving toward the goal and achieving objectives. The language of the Guideline is:

> ***Establish and communicate a goal for the safety and health program and objectives for meeting that goal, so that all members of the organization understand the results wanted and the measures planned for achieving them.***

For examples and information on goal and objectives, see Chapter 2.

VISIBLE TOP MANAGEMENT LEADERSHIP. If employees can see the emphasis that top management puts on safety and health, they are more likely to emphasize it in their own activities. It is important for worksite managers to follow set safety and health rules and work practices in order to provide an example for rank and file workers. Managers should show their involvement in other ways, as well: for example, making plant-wide safety and health inspections; chairing the safety and health committee; personally stopping activities or conditions that are hazardous until the hazards can be corrected or controlled; personally tracking safety and health performance; and -- an essential management function -- holding managers and employees accountable for their actions. The element of management leadership also should include ensuring equal safety and health protection of any contract workers at the site. Remember, actions speak louder than words. The language of the Guideline is:

> ***Provide visible top management leadership in setting up the program and ensure that all workers at the site, including contract workers, are provided equally high quality safety and health protection, so that all will understand that management's commitment is serious.***

For further information, see Chapter 3.

EMPLOYEE INVOLVEMENT. The best worker safety and health protection occurs when everyone at the worksite shares responsibility for protection. For that to happen, all employees must know that they are helping to develop the program. Employees at all levels should be actively involved in finding and correcting safety and health problems. This does not mean the employer gives up responsibility and authority. The Occupational Safety and Health Act places responsibility for worker protection against occupational hazards squarely on the employer. The wise employer, however, uses employees' unique knowledge and experience to help find problems and resolve them successfully. The Guidelines recommend that employers:

> ***Provide for and encourage employee involvement in the structure and operation of the program and in decisions that affect their safety and health, so that they will commit their insight and energy to achieving the safety and health program's goal and objectives.***

For more information on employee involvement and how to initiate or improve it, see Chapter 4.

ASSIGNMENT OF RESPONSIBILITY. Everyone in the workplace should have some responsibility for safety and health. Clear assignment helps avoid overlaps or gaps in accomplishing needed activities. In particular, you should make sure that the safety/health "expert" at the worksite is not assigned line responsibility that properly belongs to line managers and supervisors. The line responsibility would include managers and supervisors. This line responsibility would include functions such as supervising and evaluating a worker's performance in areas of safety and health, providing on-the-job training in safe work practices and personal protective equipment (PPE), and encouraging worker participation in safety and health activities. The responsibilities should flow logically from the objectives that were set to meet the general program goal. The actual language of the Guidelines is:

> ***Assign and communicate responsibility for all aspects of the program, so that managers, supervisors, and employees in all parts of the organization know what performance is expected of them.***

For more information and examples of assigned responsibility, see Chapter 5.

PROVISION OF AUTHORITY/RESOURCES. Any realistic assignment of responsibility must be accompanied by needed authority and adequate resources. The latter includes appropriately trained and equipped personnel as well as sufficient operational and capital funding. The language of the Guidelines is:

> Provide adequate authority and resources to responsible parties, so that assigned responsibility can be met.

ACCOUNTABILITY. Once you have assigned responsibility and provided the appropriate authority and resources to individuals, you must follow up by holding these persons accountable for achieving what they have been asked to do. Accountability is crucial to helping employees understand how critical their individual performances are and to teaching them to take personal responsibility for their performance. The Guidelines recommend that employers:

> *Hold managers, supervisors, and employees accountable for meeting their responsibilities, so that essential tasks will be performed*

For more information on developing accountability, see Chapter 6.

PROGRAM EVALUATION. Once your safety and health program is up and running, you will want to ensure its quality. You do this by evaluating program activities and their results in relation to the established goal and objectives. During this evaluation, keep these questions in mind: "Did we get where we wanted to go?" "Did each specific activity help us get there?" The Guidelines suggest that employers:

> *Review program operations at least annually to evaluate their success in meeting the goal and objectives, so that deficiencies can be identified and the program and/or the objectives can be revised when they do not meet the goal of effective safety and health protection.*

For more information on safety and health program evaluation and useful evaluation tools, see Chapter 12.

WORKSITE ANALYSIS

Worksite analysis is a combination of systematic actions that provide you with the information needed to recognize and understand the existing and potential hazards of your workplace. While these actions may appear complicated at first glance, they consist of activities that already are being performed in most workplaces. For the sake of clarity, the Guidelines differentiate these actions as follows:

- Comprehensive Hazard Identification
  - Comprehensive Hazard Surveys
  - Change Analysis
  - Routine Hazard Analysis
- Regular Site Safety and Health Inspections
- Employee Reports of Hazards
- Accident/Incident Investigations
- Injury and Illness Trend Analysis

COMPREHENSIVE HAZARD IDENTIFICATION. There are three components of a complete hazard inventory from which a program of prevention and control can be designed.

The first of these is the comprehensive survey. This is the most basic of all the tools used to establish the inventory of hazards and potential hazards at your worksite. This survey is best performed by experts from outside the worksite who have a broad-based knowledge that includes safety engineering, industrial hygiene, and often, occupational medicine. After the initial survey, comprehensive surveys need to be repeated only periodically. These will enable the expert who is conducting the survey to apply new information concerning the hazards or methods of control.

The second component of comprehensive hazard identification is change analysis. This means what its name suggests. Each time there is a change of facilities, equipment, processes or materials in your workplace, the intended change should be analyzed for hazards before being introduced. This helps avoid exposing your workers to new hazards. Also, it helps you to avoid the needless expense of retrofitting controls after installation and use.

The final component of a complete hazard inventory is routine hazard analysis. The basic form of this analysis which is useful at every type of worksite is the job safety analysis. This analysis divides a job into tasks and steps and then analyzes the potential hazards of each step. The analysis produces a method of prevention or control to reduce exposure. A variation that is used at worksites with highly complex hazards -- such as chemicals or nuclear energy -- is the process hazard analysis. This analysis reduces a process to its smallest elements, identifies the hazards of these elements, and devises the preventive measures or controls. In rapidly changing workplaces such as construction, phase hazard analysis is another useful form of the routine hazard analysis. Here each phase of the rapidly changing work is analyzed for the new hazards it may introduce so that preventions or controls can be devised.

The language of the Guidelines follows:

> ***So that all hazards are identified: (a) conduct comprehensive worksite surveys to establish safety and health hazard inventories and update the surveys periodically as expert understanding of hazards and the methods of control in our industry change; (b) analyze planned and new facilities, processes, materials, and equipment; and (c) perform routine hazard analysis of jobs, processes, and/or varied phases of work as needed.***

For more information and tools to help you, see Chapter 8 and OSHA Publication 3071, "Job Hazard Analysis."

<u>REGULAR SITE SAFETY AND HEALTH INSPECTIONS</u>. General site inspections should be performed by personnel at the worksite. These employees will need training to recognize hazards that can slip through the controls designed to reduce employee exposure. Inspectors also should watch for hazards that may n ot have been identified in the comprehensive survey or uncovered by other means. The actual language of the Guidelines is:

> ***Provide for regular site safety and health inspections, so that new, recurring, or previously missed hazards and failures in hazard controls are identified.***

For further information, see Chapter 9.

<u>EMPLOYEE REPORTS OF HAZARDS</u>. A successful safety and health program finds and corrects problems before any harm is done. Involving a greater number of workers in the monitoring process will increase the thoroughness and efficiency of the process. It is imperative that one or more systems be established for employees to alert management to the hazards. It also follows that employees who report hazards will be protected from harassment.
Employees should see timely and appropriate responses to their reports. These responses are visible evidence of management's commitment to worker safety and health and it also demonstrates management's desire for meaningful employee involvement. The actual language of the Guidelines is:

So that employee insight and experience in safety and health protection may be used and employee concerns addressed, provide a reliable system for employees, without fear of reprisal, to notify management personnel about conditions that appear hazardous and to receive timely and appropriate responses; and encourage the employees to use the system.

For further information and assistance, see Chapter 9.

<u>ACCIDENT/INCIDENT INVESTIGATION</u>. Investigating accidents and incidents (these terms are defined in Chapter 9) presents another opportunity to find hazards and design prevention and controls. For each accident, there usually are several steps that must be taken to prevent future occurrences. The Guidelines recommend that you:

Provide for investigation of accidents and "near miss" incidents, so that their causes and the means for their prevention are identified.

For further information, see Chapter 9 and the National Safety Council publication, "Accident Investigation...A New Approach."

<u>INJURY AND ILLNESS TREND ANALYSIS</u>. It is useful to review injuries and illnesses that have occurred over a period of time, including those illnesses that do not appear to be occupationally related. Such an analysis may reveal patterns or clusters that suggest common worksite causes or origins not apparent when the cases first were recorded. The Guidelines recommend that employers:

Analyze injury and illness trends over time, so that patterns with common causes can be identified and prevented.

For further information, see Chapter 9.

HAZARD PREVENTION AND CONTROL

Once you have inventoried the hazards and potential hazards of your workplace, you can begin designing a program of prevention and control. Your program will consists of:

- **Appropriate Controls**
- **Preventive Maintenance**
- **Emergency Preparation**
- **Medical Program**

APPROPRIATE CONTROLS. In designing a program of prevention and control, the ideal choice always is prevention of employee exposure to a hazard. This means removing the hazard or preventing exposure through engineering controls. Where neither of these measures is feasible, the next best choice is complete enclosure. Where complete enclosure is not feasible, a combination of partial enclosure and work practices, perhaps including PPE, is the next best choice. Where no enclosure is possible, a combination of work practices and PPE should be used.

Keep in mind that work practices and PPE place special responsibilities on the employees who use them. Employees should be trained to understand why these protective measures are necessary and how they can use these methods to protect themselves and others. Protective measures should be stressed in every possible way, including when necessary, the use of fair and consistent discipline.

When all other controls fail to provide enough reduction in exposure, appropriate administrative controls, such as worker rotation, should be used. The actual language of the Guidelines is:

> ***So that all current and potential hazards, however detected, are eliminated or controlled in a timely manner, establish procedures for that purpose, using the following measures:***
>
> ***(a) engineering techniques where feasible and appropriate;***
>
> ***(b) procedures for safe work that are understood and followed by all affected parties, because of training, positive reinforcement, correction of unsafe performance, and, if necessary, enforcement through a clearly communicated disciplinary system;***
>
> ***(c) provision of personal protective equipment; and***
>
> ***(d) administrative controls, such as reducing the duration of exposure.***

For further information, see Chapter 8.

PREVENTIVE MAINTENANCE. A good equipment maintenance program can keep engineering control systems working as intended and can prevent ordinary non-hazardous equipment from becoming hazardous. For these reasons, the Guidelines recommend that you:

Provide for facility and equipment maintenance, so that hazardous breakdown is prevented.

For further information, see Chapter 8.

EMERGENCY PREPARATION. Planning and preparing for emergencies is an essential part of any effective safety and health program. The greater the possibility of an emergency, the more preparation should be done. All employees should know exactly what they must do in each type of emergency. With sufficient practice the responses needed at times of crisis can become practically automatic. The language of the Guidelines is:

Plan and prepare for emergencies, and conduct training and drills as needed, so that the response of all parties to emergencies will be "second nature."

For further information, see Chapter 8 and OSHA Publication 3088 (Revised 1991), "How to Prepare for Workplace Emergencies."

MEDICAL PROGRAM. Having a medical program onsite does not necessarily mean having an onsite doctor or nurse. It does mean involving occupational health professionals in worksite analysis for hazards, in hazard prevention and control programs, in early recognition and treatment of injuries and illnesses, and in limiting the severity of illness and injury. For smaller businesses, these important tasks can be arranged by contract with occupational health professionals. Besides health professionals, other employees at the site should be trained in first aid and CPR. The Guidelines recommend that you:

Establish a medical program that uses occupational health professionals in the analysis of hazards, early recognition and treatment of illnesses and injury, and limitation of the severity of harm; and which provides first aid and cardiopulmonary resuscitation (CPR) onsite and physician and emergency medical care nearby, so that harm will be minimized if an injury or illness does occur.

For more information, see Chapter 10.

SAFETY AND HEALTH TRAINING

For an effective program of safety and health management, it is crucial that everyone at the worksite understand his/her role in that program, the hazards and potential hazards that need to be prevented or controlled, and the ways to protect themselves and others. You can achieve such a program by:

- Ensuring that employees understand hazards,
- Ensuring that supervisors understand their responsibility to:
  - analyze the work under their supervision of hazards,
  - maintain physical protections, and
  - reinforce and enforce needed protective measures; and
- Ensuring that managers understand their responsibilities.

EMPLOYEES. At a minimum, employees must know the general safety and health rules of the worksite, specific site hazards and the safe work practices needed to help control exposure, and the individual's role in all types of emergencies. You usually can achieve this by thorough orientation, periodic safety and health training, and emergency drills. Additional specialized training may be needed to teach skills required for the job or for activities under the safety and health program. The actual language of the Guideline is:

> ***Ensure that all employees understand the hazards to which they may be exposed and how to prevent harm to themselves and others from exposure to these hazards, so that employees accept and follow established safety and health protections.***

For information about employee activities within a safety and health program, see Chapter 4. For further information about employee training, see Chapter 11 and OSHA Publication 2254, "Training Requirements in OSHA Standards and Training Guidelines."

SUPERVISORS. Supervisors should be given special training to help them in their leadership role. They should be taught to look for hidden hazards in the workplace under their supervision, to insist upon the maintenance of the physical protection in their areas, and to reinforce employee hazard training through performance feedback and, when necessary, fair, consistent enforcement. The Guidelines recommend:

> ***So that supervisors will carry out their safety and health responsibilities effectively, ensure that they understand those responsibilities and the reasons for them, including:***
>
> ***(a) analyzing the work under their supervision to identify unrecognized potential hazards;***
>
> ***(b) maintaining physical protections in their work areas; and***
>
> ***(c) reinforcing employee training on the nature of potential hazards in their work and on needed measures, through continual performance feedback and, if necessary, through enforcement of safe work practices.***

For further information, see Chapter 11.

MANAGERS. All line managers must understand their own responsibilities for safety and health. This probably will not require special classroom training; however, you will need some form of effective communication that will raise managers' safety and health awareness. The Guidelines recommend that employers:

> ***Ensure that managers understand their safety and health responsibilities as described under "Management Leadership and Employee Involvement," so that managers will effectively carry out those responsibilities.***

For further information, see Chapter 11.

SUMMARY

Based on a variety of experiences, we are convinced that good management of worker safety and health protection will translate into fewer injuries and illnesses. We also believe that effective management will pay off in better employee morale, higher productivity, and improved product quality. This manual can help set up a quality safety and health management program to provide that protection. The information we present is useful whether you own or manage a small or large business. We predict that your efforts to protect your workers will be amply rewarded.

APPENDIX 1-1

WHAT DIFFERENCE DOES IT MAKE?

There are several good reasons for improving the way you manage your worker protection program. Better management can help reduce lost time and costs; improve productivity, morale, and quality of product; prevent OSHA citations; and, should the need ever arise, strengthen your company's position during any judicial proceedings.

REDUCED INJURIES

One consultation project conducted a study to assess the outcomes of employer participation in the Safety and Health Achievement Recognition Program (SHARP) program in their state. They found that those employers who participated in SHARP for two or more years on average experienced only 40 percent of the injuries expected for their respective industries and less than half (46%) of the total number of injuries expected for these industrial classifications overall.

A small meatpacking establishment with 95 employees, after working with the consultation project to develop an effective workplace safety and health program, lowered their loss workday injury rate (LWDI) from 18.9 to 7.0.

REDUCED COSTS

One fabricated structural steel manufacturing operation began working with the consultation project two years ago. Since that time, their LWDI rate has dropped from 14.0 to 1.0, and they have returned a portion of workers' compensation premiums back to the employees. To date, over $50,000 has been distributed back to their employees.

One forklift manufacturing company has experienced a decline in losses due to injuries and illnesses on the job from $70,000 three years ago to $7,000 in the past year. The owner attributes these decreases to their involvement with the consultation program and the services provided to him.

A Business Roundtable report, "Improving Construction Safety Performance" (New York: The Business Roundtable, Report A-3, January 1982, p.16), concludes that for construction, the savings from effective administration of safety and health protection is 3.2 times the cost.

Frank E. Bird, Jr., in Management Guide to Loss Control, (Loganville, GA: Institute Press, 1978), says that for every $1 spent on medical or insurance compensation costs -- considered "direct costs" -- for a worker injury, from $5 to $50 more is likely to be spent on "indirect costs" to repair building, tool, or equipment damage; to replace damaged products or materials; and to make up for production delays and interruptions. He says that an additional $1 to $3 in indirect costs will be spent for hiring and training replacements and for time needed to investigate the incident. Mr. Bird's figures do not consider the impact of reduced commitment to work when employees operate in a situation in which injuries are common. And, because they frequently involve longer absences, the impact of job-related illnesses can be even greater than work-related injuries.

According to James Findlay and Raymond Kuhlman in Leadership in Safety, (Loganville, GA: Institute Press, 1980), effective safety and health management can contribute more to organizational profits than your best salesmen. They recommend that you use a chart similar to the one below to figure out the estimated impact of accidents to your organization. The chart shows the amount of extra sales needed to pay for accidents; i.e., if your profit margin is 4 percent, it is necessary for you to sell an additional $250,000 in products to pay the costs of $10,000 in annual losses from injury, illness, or property damage. With a 2 percent profit, sales must be increased to $500,000 in order to cover the $10,000 in losses.

ACCIDENT COSTS	1% PROFITS	2% PROFITS	3% PROFITS	4% PROFITS
$ 1,000	100,000	50,000	33,000	25,000
$ 5,000	500,000	250,000	167,000	125,000
$ 10,000	1,000,000	500,000	333,000	250,000
$ 25,000	2,500,000	1,250,000	833,000	625,000
$ 100,000	10,000,000	5,000,000	3,333,000	2,500,000

BETTER EMPLOYEE MORALE, PRODUCTIVITY AND PRODUCT QUALITY

An automotive parts manufacturer with 170 employees called on the consultation program for assistance in identifying and correcting occupational health and safety hazards. The consultation project worked with the employer not only to identify and correct the hazards noted during their on-site visit, but also helped the employer to develop and implement an effective workplace safety and health program. As a result of the visit the employer noted a much lower frequency in accidents, a reduction in his workers' compensation costs, and a much improved worker morale at the site. The company's president offered the following comment, "Utilizing the . . . consultative service demonstrated to our work force (which is represented by the Teamsters) our concern for their well being. Our teamsters local is enthusiastic about our continued use of the consultative program. Not only did we reduce costs related to safety and health, but use of this valuable program provided me with a comfort factor because I know there will be no surprises in the plant."

OSHA ENFORCEMENT

Over the past several years, OSHA has added more safety and health management provisions to its promulgated standards. These provisions include self-inspections for specific conditions, employee training and specific types of hazard analysis. They also have focused more on the management of workplace safety and health when enforcing the "general duty clause" (Sec. 5(a)(1), 29 U.S.C. 654), which requires that each employer "furnish each of his employees employment and a place of employment that are free from recognized hazards that are causing or likely to cause death or serious physical harm to his employees." As an employer, you have a responsibility to take feasible steps to render your workplace free of recognized hazards. As part of this responsibility, you have a duty to establish and maintain management practices necessary for ensuring that safe and healthful work practices are followed.

JUDICIAL PROCEEDINGS

When an employer is cited for a violation he believes was caused by an employee's failure to obey a safety rule, evidence of good management practices is particularly important in establishing a defense. Decisions from the Occupational Safety and Health Review Commission and the U.S. Courts of Appeal clearly hold that, to establish an "employee misconduct" defense, an employer must show that it has adopted appropriate safety rules, and that it enforces these rules through such means as regular training and adequate supervision. In short, employers can avail themselves of this defense only by maintaining a comprehensive, adequate safety program.

APPENDIX 1-2

USING THE BELL FORMULA TO HELP DETERMINE YOUR COSTS OR SAVINGS

In his article, "Gauging Safety Outlays and Objectives," in Occupational Hazards, June 1987, David R. Bell describes a method you can use to find out the costs to your worksite when injuries occur, and the costs to your worksite's experience to your industry's average for lost workday case rates. To do this, you use information published annually by the Bureau of Labor Statistics (BLS), other information easily available at your worksite, and Bell's formula for the calculation of "lost workday cases avoided."

To begin, find the latest published lost workday case rate for your industry by checking the BLS publication "Occupational Injuries and Illnesses in the United States Industry." (The BLS statistics are published annually -- usually 1.5 years after the year for which they were collected-- and are available from the U.S. Printing Office, Washington, DC 20402). In this publication, locate the table entitled "Reported occupational injury rates by industry." Make sure that you do not use the table that includes illnesses. When you have found the correct table, look for the SIC (Standard Industrial Code) that best describes your industry. From the table's column headed "Lost Workday Cases," take the number reported for the most recent year. That number represents the average lost workday cases per 100 workers. It is the lost workday case rate (LWCR) for your industry.

Next, calculate the employment at your site in terms equivalent to the data used by BLS. The BLS number represents the equivalent of one worker's full work year, whether it was actually worked through regular shifts, part-time work, or overtime work. To figure your equivalent employment, divide the number of total hours worked by 2,000. (The number 2,000 represents the average number of hours a full-time worker is generally expected to work each year in the United States.)

With this information, you can use the Bell formula to calculate how many injuries with lost workdays your site would have had if it had been exactly average for your industry. This number Bell calls "expected cases." You can compare this expected number to the actual number of lost workday cases you had at your site. If you had fewer cases than the expected number, the difference between the number of expected cases and the actual number of cases that you experienced at your site is called "injuries avoided." If you had more cases than the expected number, the difference is "excessive" cases.

Bell suggests that you also calculate the average cost of lost workday cases at your site. Bear in mind both the direct and indirect costs as discussed in the preceding appendix. When you have found the average cost, you can use the Bell formula to figure how much you saved your company by "avoiding lost workday cases," or how much it cost your company to be over the average. You can also calculate the potential savings from improving your safety and health management enough to avoid more injuries.

This is Bell's formula:

$$\frac{\text{Average Lost Workday Case Rate} \times \text{Equivalent Site Employment}}{100} = \text{Expected Lost Workday Cases}$$

To illustrate further how this formula can work for you, consider a glass container plant that employed 200 workers in 1990. To apply the Bell formula to this site's safety and health statistics, begin by looking up the SIC code for glass container plants in Table 3 of the BLS bulletin. The SIC code is 3221. The table shows that for that SIC code in 1990 (the most recent figures available), the lost workday cases averaged 8.2 per 100 workers in that industry.

Next, calculate the equivalent employment for this site. You know from site records that in 1991 workers logged 456,432 hours of work at this site. Using 2,000 as the average number of hours a full-time worker in the United States is expected to work each year, you divide 456,432 by 2,000 to find the full-time equivalent employment at this site. The result of that division is 228.2. Applying the Bell formula, you multiply the lost workday case rate (8.2) by the site's full-time equivalent employment (228.2). The result of that multiplication is 1,871.2. Finally, divide 1,871.2 by 100 to find the expected lost workday cases if you were average for your industry. You can expect to find 18.7 (rounded up to 19) lost workday cases at this facility.

Rendering the Bell Formula mathematically, you get the following equation (with the answer rounded to the nearest whole number):

$$\frac{8.2 \times 228.2}{100} = 19$$

The glass container plant, with its very good safety and health program, had only six lost workday cases. This was 13 (19 - 6 = 13) fewer than would have been expected had it been average for its industry. The employer estimates that lost workday cases incur direct costs averaging $16,800. By avoiding 13 of the expected lost workday cases for its industry, this site saves $218,400 in direct costs each year. Conversely, if this site had experienced 25 lost workday cases, subtracting expected cases from actual lost workday cases (25 - 19) would show that his site had six lost workday cases above its industry's expected average. These six lost workday cases would have cost $100,800 more than expected direct costs had the site been average.

Although economic incentives are secondary to human health and safety as motives for safety and health protection, the potential economic benefit of effective safety and health management is considerable and clearly worth considering.

Most people, correctly or not, believe their operation is significantly different from others in their SIC and reject the use of the formula. If you prefer to use your own history or other hypothesis to calculate probable case rates, that certainly is not discouraged. It is very important, however, to use some reasonable method to project a quantitative case rate as a standard of measure.

How much would you save at your worksite if you could be below, or even 50 percent below, your industry average? These figures can help you make a good economic case for improving the management of your safety and health effort even if some spending is required.

2.

CHAPTER 2

DETERMINING THE DIRECTION OF YOUR PROGRAM: ESTABLISHING POLICY, GOAL AND OBJECTIVES

INTRODUCTION

When you embark on a journey you usually have a reason for going, a destination and a specific plan for reaching your destination. Similarly, when planning a safety and health program, you first decide and put in writing your reason for establishing such a program. This is you policy. Next you decide where you want to end up. This is your goal. Then you map out the path toward your goal, the roads you will take and the vehicles you will use. These are your objectives. In this way you decide the direction of your program.

This chapter will help you begin your journey by explaining how to write and communicate your safety and health policy, and how to set and evaluate your goal and objectives. You will find many examples and worksheets to help you on your way.

POLICY

The hallmark of every successful safety and health program is top management's active and aggressive commitment. This commitment, in turn, influences the actions of the company's managers, supervisors and employees. It ultimately decides the effectiveness of the safety and health program in reducing or eliminating workplace injuries and illnesses.

The company states its commitment through a written and clearly communicated policy for workplace safety and health. This policy stresses the top priority of employee safety and health. The policy statement should be signed by the highest ranking company official on the site.

THE PRIORITY OF SAFETY AND HEALTH

A truly successful company places workplace safety and health ahead of such priorities as production, sales and quality control. If your policy statement makes this clear, it will be easier for employees to choose the correct action when a conflict arises between safety and health and other priorities. Here are some examples of policy statements that convey this belief:

- ☑ **"People are our most important resource. Our company's principal responsibility is the safety and health of our employees."**
- ☑ **"Every employee is entitled to a safe and healthful place in which to work."**
- ☑ **"No job is so important it can't be done in a safe and healthful manner."**
- ☑ **"If it is not safe and healthful, we will not do it."**

COMMUNICATING YOUR POLICY

To be effective, it is critical that your safety and health policy be communicated to all employees. You communicate your policy by word, action and example.

<u>Communicate by Word</u>. A new employee starts learning about the company's attitude toward safety and health from day one. By discussing job hazards and providing training in safe work procedures, both one-on-one and in group meetings, you tell the employee that safety and health have a high priority in your company. The supervisor's continuing emphasis on safety and health reinforces this positive company attitude.

In the smallest of companies, the safety and health policy may be easily explained and understood through spoken statements. However, for all companies, a carefully written policy statement is always recommended. A written statement:

- **Clarifies policy,**
- **Creates consistency and continuity,**
- **Serves as a checkpoint whenever safety and health appear to conflict with production or other priorities, and**
- **Supports your supervisors in their enforcement of safety and health rules and safe work practices.**

You will want to include the written statement in the information you give new employees. Be sure to post a signed policy statement on employee information bulletin boards. Another eye catching way you can communicate your safety and health policy is by adding it to your company letterhead.

For assistance in writing a company or worksite safety and health policy, see Appendix 2-1, "Policy Statement Worksheet."

Keep in mind that the written statement is not the policy. It is simply one way of communicating the policy. The real policy is your attitude toward your employees' safety and health. You prove this attitude by your actions.

Communicate by Action. What you do -- or fail to do -- speaks louder than what you say. Show your concern for your employees' safety and health by committing resources to the prevention and control of unsafe or unhealthful work or working conditions, to safe work practices and personal protective equipment (PPE) where needed, and to safety and health training. Whenever you display a willingness to put safety and health before short-term production goals, your actions forcefully and clearly proclaim your policy.

Communicate by Example. Top management, middle managers and supervisors express the company's attitude toward workplace safety and health by their daily example. The rules and regulations that you post on bulletin boards and discuss at meetings are useless if management does not follow and enforce them. Set an example: Use PPE properly. Operate equipment safely. Hold supervisors accountable for their safety and health responsibilities. Run your business in a safe and healthful manner.

GOAL

By setting a safety and health policy, you have decided the reason for your journey: to establish an effective safety and health program. Now you must choose your destination, the point toward which your program strives. It is time to identify and set your program goal.

The policy statements discussed above all boil down to the same idea of desiring to provide work and working conditions that are not harmful to your employees. This is in keeping with the stated purpose of the Occupational Safety and Health Act of 9170 [29 U.S.C. 651 et seq.], "to assure so far as possible...safe and healthful working conditions" and to require that each employer "furnish to each of his employees employment and a place of employment which are free from recognized hazards. . ."

In moving from broad concept to more concrete goal, there are at least two basic goal types to consider: numerical and descriptive.

Numerical Goal. Numerical Goals have the advantage of being easy to measure. However, it is difficult to set a numerical goal that is both attainable and comprehensive enough to serve as destination for your journey.

- If you set a goal, for example, of zero hazards at any time, it may be so difficult to reach that you and your employees will become disillusioned long before you have a chance to reach your destination.
- You could set a goal of a certain number of injuries. In doing so, however, you ignore both illnesses and those existing hazards that have not resulted in an injury yet.
- A goal of a certain number of injuries and illnesses may not be feasible. Illnesses often are difficult to recognize until long after employees' exposure to hazards that could have been prevented or better controlled. And as with the example above, this goal does not address hazards that have not yet resulted in injury or illness.

Descriptive Goal. No numerical goal can be sufficiently inclusive and still attainable. Therefore, we recommend that you adopt a broad, descriptive safety and health goal: a comprehensive program that assesses all existing and known potential hazards of your worksite and prevents or controls these hazards. Such a goal is neither as succinct nor as easily measurable as a numerical goal. But it is attainable. Further, this goal will be helpful in setting objectives. And it should not be difficult to evaluate objectives and program results against this goal. You may find another way of stating this concept, but we urge you to stay with this basic idea.

OBJECTIVES

You have established the reason behind your journey (policy) and your desired destination (goal). Now you are ready to decide on a travel route. The specific paths you will follow in your journey are your objectives. Setting objectives will make the difference between a haphazard trip and a carefully planned journey. Careful planning is much more likely to get you where you want to be.

Begin to develop meaningful objectives by answering these questions:

- Where do you want to be?
- Where are you now?
- What must be done to get from here to there?

When you set a goal, you decided where you wanted to be. The next step is to decide where you are now.

Where Are You Now? Before figuring out how to get from point A to point B, it helps to have a clear idea of the location of point A. This may seem absurdly obvious; but most of us, at one time or another, have jumped into a new project or taken off in a new direction without first assessing our present situation. Now is the time to gather as much information as possible about the current conditions at your workplace and about practices that are already a part of your safety and health program.

Is Your Safety and Health Program Complete? At a minimum, your program should reflect these four basic elements:

- **Management Leadership and Employee Involvement,**
- **Worksite Analysis,**
- **Hazard Prevention and Control, and**
- **Safety and Health Training.**

These four elements are discussed in detail in Chapter 1 and in several other sources, including, OSHA, Department of Labor, "Safety and Health Program Management Guidelines" (54 CFR 3908, January 26, 1989); and OSHA Publication 2209 (Revised 1990), "The OSHA Handbook for Small Businesses."

In the remaining chapters we will focus on how to implement these elements.
Which of the elements are missing from your workplace? Which need improvement? Consider developing objectives that will help you fill the gaps.

Get Everyone Involved. Here is an opportunity to get employees involved. Ask employees and supervisors to help you identify both the successful and unsuccessful parts of your program. Look at existing safety and health activities at your workplace. Which ones work well and which do not? Study your records (accidents, injury or illness data, workers' compensation rates) to see what they tell you.

Take a Good Look at Your Physical Surroundings. What obvious physical conditions currently exist that indicate OSHA violations or other hazards? In answering this question, you are beginning to identify your workplaces' problems and look ahead to their solution. If you come up with an excessive number of physical problems, get these fixed before your attempt to set objectives. Not only are you vulnerable to an OSHA inspection, you are also putting your employees at risk. Further, those safety and health problems that are obvious to you are undoubtedly obvious to your employees. Correct the problems and you demonstrate your interest in their safety and health.

What Must be Done to Get From Here to There. Now that you know here you stand, what do you need to get done? This is another opportunity to get employees involved in the development of your program. Allow them to participate in setting program objectives. Involvement helps create an atmosphere of acceptance and commitment to the safety and health effort.

Objectives are statements of results or performance. They are short-term, positive steps along the way to your company's goal. Workplace objectives for safety and health are similar to those you set for other business functions such as sales or production. They identify WHAT? WHEN? and HOW MUCH? They do not include a justification for why they should be done; that is included in your policy statement. Nor do they contain a description of how they should be accomplished; that is included in your action plan.

Identify Your Objectives. Anything can become an objective -- from creating a safety and health committee to investigating accidents to developing an orientation program for new employees. You must decide which activities are most important to your program goal and which will help you create an effective overall safety and health program. The objectives you select should be consistent with your basic safety and health policy. And they should be part of the normal business of your company, rather than special projects added on to the normal workload.

Set Your Objectives. Objectives should be based on performance measures, that is, indicators that tell you whether you did or did not perform as expected. When setting objectives, keep the following points in mind:

- **Objectives should relate to some part of your overall goal. Example: "Develop and carry out a program to train and license fork lift truck drivers." This objective relates to the part of your goal to ensure that all employees understand the hazards and potential hazards of their work and how to protect themselves and others.**

- **Objectives should aim at specific areas of performance that can be measured or verified. Example: "Improve safety and health performance next month," is too general an objective to be useful. Better to say, "Make weekly inspections and make certain all hazards found are corrected within 24 hours."**

- **Objectives should be realistic and attainable but should still present a significant challenge. Example: "Reduce recordable injuries in the upcoming year by 100 percent." This objective may be unattainable because of the extent and complexity of the measures needed to prevent all injuries. An objective well beyond reach can soon create a defeatist attitude among all those working toward its achievement. On the other hand, "Reduce recordable injuries by 5 percent in the next year," can destroy employee interest by presenting too small a challenge.**

- **When setting objectives, solicit ideas from as wide a range of employees as practical. Your ideas already may strongly influence your supervisors. Nonetheless, you will find that safety and health objectives are most effective when you discuss them beforehand with your supervisors or employees. At the least, secure their agreement or cooperation. People who feel they have helped set an objective will be most motivated to achieve that objective.**

- **Objectives should be understood by all those directly involved. Use terms that have a clear meaning to all concerned supervisors and employees. Leave no doubt about what is to be accomplished. Example: "Find out the cause(s) of all accidents and incidents," may be too abstract to be understood (and therefore accomplished) by those with responsibility. Be clear and specific: "Investigate all accidents and incidents at once to determine all contributing causes, and take corrective action within 24 hours of completing the investigation."**

- **Objectives need to be achievable with available resources. An objective that requires a large outlay of money or an increase in staff during a budget crunch probably won't be achieved. Setting such an objective is a waste of time and effort. However, you need not discard this objective. Postpone it. For the present, create an intermediate objective of working to produce the needed resources. Remember, you travel toward your goal one step at a time. The objective you achieve this year may enable you to tackle a larger objective next year.**

Write Your Objectives. Put each objective in writing. That gives it more importance. It also helps you track your position at any time and thereby determine how far along you are in accomplishing the assignment.

Explain in concrete terms what is to be achieved, to what degree, and by when. Be very specific in your wording, and forces on performance. You may also want to include a statement showing the maximum amount of time or money available to accomplish the objective.

Here are some examples of safety and health program objectives:

- Conduct weekly inspections with emphasis on good housekeeping, proper use of protective equipment, condition of critical parts of equipment and preventive maintenance.
- Find out the cause(s) of any accident within 24 hours.
- Eliminate any hazard(s) identified during accident investigations and weekly p lanned inspections within 24 hours whenever possible.
- Complete one job safety analysis each month in each department, with follow-up revision of safe work procedures and employee training by the following month.
- Hold and evaluate emergency drills for tornadoes every six months and a joint fire drill/evacuation with local emergency organizations every year.

Keep copies of the written objectives and use them in discussions with your supervisors and employees. Be sure your people understand their assigned re sponsibilities. Stress that they will be held accountable for these responsibilities. For further guidance, see Chapters 5 and 6.

Is It Working? Review you objectives periodically.

- Are you getting the desired performance from supervisors and employees?
- Are objectives being achieved?
- Are the results moving you toward your goal?

Any program or activity in which you invest time and resources on a continuing basis should prove its worth. If an objective has been achieved, but there continue to be too many injuries, too many close calls, too many unsafe acts, or no improvement in conditions, then different or additional objectives are needed.

The worksheets in Appendices 2-2 and 2-3 provide a model for you to use in writing up your safety and health program objectives. Chapter 12 will help you evaluate the effectiveness of these objectives.

SUMMARY

Your safety and health program deserves to be carefully thought out and directed. The first step is to write and communicate your safety and health policy. This states your reasons for the program and your commitment to the health and safety of your employees. You express this policy by word (both spoken and written), by action and by example.

The second step is to set and communicate a goal for your program. This is like choosing the destination for a journey. It requires a determination of where you want to be. Your goal can be expressed either numerically or descriptively. There are advantages and difficulties with both, but we have found that a comprehensive and yet attainable goal is most likely to be descriptive. We recommend the following goal:

A comprehensive program to assess all existing hazards and known potential hazards of the workplace and to prevent or control those hazards.

The third step in determining the direction of your safety and health program is to map out your route by setting program objectives. To do this, you first need to know where you are: take a close look at the current state of your safety and health program and your workplace. What more is needed to protect your workers' safety and health?

The objectives that you set should be specific, measurable actions that move you toward your goal. They must be attainable and yet challenging. Use the clearest possible wording so that your supervisors and employees understand their responsibility and accountability. Once your program is set in motion, review these objectives periodically. Is everyone performing as expected? Are the results being achieved worth the time and resources being expended? Are you moving closer to your goal?

The success of this effort depends on the commitment of top management and the participation of your workforce. Involve your supervisors and employees in the setting of program objectives. The greater their involvement in mapping the route to safety and health, the greater will be their acceptance of the challenges and responsibilities of their journey.

APPENDIX 2-1

POLICY STATEMENT WORKSHEET

Policy statements can vary in length and content. Some contain policy only. Others include company philosophy. Still others spell out rules and procedures. Some policy statements will cover items such as specific assignment of responsibility, delegation of authority, description of duties, safety and health rules, and establishment of a safety committee. While some companies may wish to include these additional items in the policy statement, we believe it is usually best to leave these details for later discussion.

This worksheet is designed to help you develop your safety and health policy statement. It contains examples of specific statements often found in safety and health policies. These are examples only, but they may give you ideas for a policy statement that expresses your style, your attitudes and your values.

INTRODUCTORY STATEMENT

The written policy statement generally starts with a clear, simple expression of your concern for and attitude about employee safety and health. Examples of introductions of policy statements include:

- This company considers no phase of its operation or administration more important than safety and health. We will provide and maintain safe and healthful working conditions, and we will establish and insist on safe work methods and practices always.
- Accident prevention is a primary job of management, and management is responsible for establishing safe and healthful working conditions.
- This company has always believed that our employees are our most important asset. We will always place a high priority on safe operations and on the safety and health of employees.
- The company will, at all times and at every level of management, attempt to provide and maintain a safe and healthful working environment for all employees. All safety and health protection programs are aimed at preventing accidents and exposures to harmful atmospheric contaminants.
- All members of management and all employees must make safety and health protection a part of their daily and hourly concern.

PURPOSE/PHILOSOPHY

An effective safety and health program will have a stated purpose or philosophy. This is included in the written policy statement so that both you and your employees are reminded of the purpose and value of the program. You may wish to incorporate into your policy such statements as:

- We have established our safety and health program to eliminate employee work-related injuries and illnesses. We expect it to improve operations and reduce personal and financial losses.

- Safety and health protection shall be an integral part of all operations including planning, procurement, development, production, administration, sales and transportation. Accidents and health hazard exposures have no place in our company.

- We want to make our safety and health protection efforts so successful that we make elimination of accidents, injuries and illnesses a way of life.

- We aim to resolve safety and health problems through prevention.

- We will involve both management and employees in planning, developing, and implementing safety and health protection.

MANAGEMENT RESPONSIBILITIES

Your safety and health action plan will describe in detail who is to develop the program and make it work, as well as who is assigned specific responsibilities, duties and authority. The policy statement may include a summary of these responsibilities.

For example:

- Each level of management must reflect an interest in company safety and health and must set a good example by complying with company rules for safety and health protection. Management interest must be vocal, visible and continuous from top management to departmental supervisors.

- The company management is responsible for developing an effective safety and health program.

- Plant superintendents are responsible for maintaining safe and healthful working conditions and practices in areas under their jurisdiction.

- Department heads and supervisors are responsible for preventing accidents and health hazard exposures in their departments.

- Supervisors are responsible for preventing accidents and health hazard exposures on their lines.

- Supervisors will be accountable for the safety and health of all employees working under their supervision.

- The Safety Director has the authority and responsibility to provide guidance to supervisors and to help them prevent accidents and exposure to health hazards.

- Management representatives who have been assigned safety and health responsibilities will be held accountable for meeting those responsibilities.

EMPLOYEE RESPONSIBILITIES

Many companies acknowledge the vital role of their employees in the operation of a successful safety and health program by summarizing employee roles and contributions in the policy statement. Here are some examples:

- All employees are expected to follow safe working practices, obey rules and regulations, and work in a way that maintains the high safety and health standards developed and sanctioned by the company.

- All employees are expected to give full support to safety and health protection activities.

- Every employee must observe established safety and health regulations and practices, including the use of personal protective equipment.

- All employees are expected to take an active interest in the safety and health program, participate in program activities, and abide by the rules and regulations of this company.

- All employees must recognize their responsibility to prevent injuries and illnesses and must take necessary actions to do so. Their performance in this regard will be measured along with general performance.

CLOSING STATEMENT

The closing statement is often a reaffirmation of your commitment to provide a safe and healthful workplace. It also may appeal for the cooperation of all company employees in support of the safety and health program.

- **I urge all employees to make this safety and health program an integral part of their daily operations.**

- **By accepting mutual responsibility to operate safely, we all will contribute to the well-being of one another and consequently the company.**

- **We must be so successful in our efforts that total e limination of accidents, injuries and illnesses becomes a way of life.**

SUMMARY

Generally a written safety and health policy statement will run six to 12 sentences in length. It should include the five elements listed above: an introductory statement, a statement of the purpose or philosophy of the policy, a summary of management responsibilities, a summary of employee responsibilities, and a closing statement.

Appendix 2-2

SAMPLE SAFETY & HEALTH POLICY STATEMENT

This company considers no phase of its operation more important than safety and health protection. We will provide and maintain safe and healthful working conditions and establish and insist upon safe work methods and practices always.

Safety and health shall be an integral part of all operations including planning, procurement, development, production, administration, sales and transportation. Accidents have no place in our company.

We will work consistently to maintain safe and healthful working conditions, to follow proper operating practices and procedures designed to prevent injury illnesses, and to comply with Federal, state, local and company safety and health regulations.

Each level of management must reflect an interest in company safety and health objectives and is required to set a good example by always observing the rules as a part of the normal work routine. Management interest must be vocal, visible and continuous, from top management to departmental supervisors.

All employees are expected to follow safe working practices, obey rules and regulations, and work in a way that maintains the high safety and health standards developed and sanctioned by the company.

We urge all employees to make our safety and health program an integral part of their daily operations. Then the total elimination of accidents and injuries will become not just an objective, but a way of life.

Chief Executive Officer

APPENDIX 2-3

SAMPLE WORKSHEET RELATING OBJECTIVE TO GOAL

GOAL: PROVIDE A COMPREHENSIVE PROGRAM TO ASSESS AND PREVENT OR CONTROL ALL HAZARDS.

OBJECTIVE: INCREASE EMPLOYEE INVOLVEMENT IN PLANT HAZARD ASSESSMENT AND CONTROL.

ACTIVITY	PERSON IN CHARGE	EVALUATE TARGET DATE	OBJECTIVE AND RESULTS
1. Conduct monthly all employee meetings to discuss current safety and health concerns.	Manager	Begin by June	Annually
2. Establish a joint management/employee committee for inspections and accident investigations.	Manager	Committee functioning by September 30	Annually
3. Provide accident investigation training to safety committee members.	Safety Supervisor	Training completed by October 30	Track progress
4. Eliminate any hazard(s) identified during planned inspections and accident investigations within 24 hours whenever possible.	Manager	November 30	Annually
5. Provide hazard recognition training to the safety committee members.	Safety Supervisor	Training completed by December 31	Track monthly progress
6. Hold and evaluate a joint fire drill/evacuation with local emergency organization every year.	Manager	December 31	Annually

APPENDIX 2-4

GUIDELINES FOR WRITING OBJECTIVES

In general, a well-formulated objective:

- **Starts with an action verb.**
- **Specifies a single key result to be accomplished.**
- **Specifies a target date for its accomplishment.**
- **Is specific and quantitative; therefore, is measurable and verifiable.**
- **Specifies the what and when; avoids the why and how.**
- **Relates directly to the accountable manager's role in the organization.**
- **Is readily understandable by those who will be contributing to its attainment.**
- **Is realistic and attainable but represents a significant challenge.**
- **Provides maximum payoff on the required investment of time and resources when compared with other objectives being considered.**
- **Is consistent with available or anticipated resources.**
- **Is consistent with basic organizational policies and practices.**

3.

CHAPTER 3

TOP MANAGEMENT LEADERSHIP: SHOWING YOUR COMMITMENT

INTRODUCTION

Effective protection from occupational hazards takes commitment from top management. That commitment is essential, and it must be visible.

In this chapter we will describe ways to provide visible leadership. Ideally, this means involvement in a program that shows concern for every aspect of the safety and health of all workers throughout the site. Therefore, we have included a description of a system for ensuring that contract workers are both protected from hazards and prevented from endangering employees of the owner-company.

Successful top managers use a variety of techniques that visibly involve them in the safety and health protection of their workers. Look for methods that fit your style and your worksite. These methods generally can be classified as:

- **Getting out where you can be seen,**
- **Being accessible**
- **Being an example, and**
- **Taking charge.**

GETTING OUT WHERE YOU CAN BE SEEN

In recent years, we often hear the phrase "management by walking around." This describes a manager who frequents all parts of the operation, getting to know the people who make it happen, and seeing firsthand what is working well and what isn't. This can succeed not only as a tool for management but also as a message to employees. Employees who see the manager "walking around" likely will come to believe that he/she cares about what they are doing and how well they are doing it. And when they see that certain areas -- like safety and health -- interest the top brass, they become more aware of these areas.

In the area of worker safety and health, this style of management can be demonstrated either informally or formally.

Informal Action. A manager who stops to get hazardous conditions or practices corrected as he/she walks through operations areas impresses workers with the importance of health and safety. As you conduct your walk-around be particularly aware of short cuts in safe work procedures that are being taken to speed production. The involved manager knows that short cuts that cancel safety and health precautions are a form of Russian roulette. It is only a matter of time until an employee and the company get hurt.

No worker or supervisor wants to have the top manager stop the work until it can be done correctly. Consequently, this kind of informal involvement is a strong inducement for your employees to do the job right the first time.

If you also stop occasionally to compliment workers on how well they are following safe work procedures, you can expect your comments to have a strong positive influence on the desired behavior.

This type of involvement should be a fairly routine occurrence. If it happens only "once in a blue moon," it will not have significant impact. It only works for managers who are out in operational areas several times a week (if not several times every day). This informal style is particularly well-suited for the small business where the owner/manager, of necessity, spends considerable time in the operations areas.

To catch and correct hazards, you also must have a thorough knowledge of what is safe and healthful. A top manager who lacks expertise or is unsure of his/her knowledge should not try to interfere with lower level managers and supervisors who do possess shop safety expertise.

Formal Inspections. A more formal method of getting out where you can be seen is to conduct surprise inspections. These inspections must occur often enough to make a difference. Housekeeping inspections are the variety most commonly performed by top managers, possible because the plant or site manager need not be a safety or health expert to spot housekeeping violations or problems. However, such inspections do not merely provide an opportunity for management visibility: good housekeeping contributes significantly to safe and healthful conditions.

Some managers give positive or negative points during these inspections and aware prizes or a rotating trophy to the department that does the best.

A plant or site manager can accomplish much the same result by unexpectedly accompanying the safety committee or safety and health professional during a regularly scheduled inspection. Again, the element of surprise and the frequency of the manager's involvement are important.

For additional information and useful inspection tools, see Chapter 8 and OSHA Publication 2209 (Revised 1990), "OSHA Handbook for Small Businesses."

BEING ACCESSIBLE

If you can "manage by walking around," you will find many opportunities to listen and respond to employee questions and comments. But even if your duties prevent you from spending much time in the site's operations areas, you still can make yourself available to your employees through more formal systems. Take care, however, that your involvement does not undercut the authority of the managers and supervisors you have given primary responsibility for ensuring safety and health. Being accessible means walking a careful line between encouraging employees to use that access and interfering with their normal relationships and responsibilities. Appendix 3-1 at the end of this chapter offers tips on achieving this necessary balance.

Informal "Instant" Access. Again, this informal method is well-suited to the small business owner/manager. If you get into operations areas frequently, encourage your employees to speak up about problems they see interfering with getting the work done in a safe and healthful manner. (Obviously, you need not focus only on safety and health.) Take their concerns and questions seriously and make sure they get timely and appropriate responses. In return, your employees will continue to let you know what is troubling them.

Open Door Policy. If your managerial work keeps you in your office, an "open door" policy might be a good choice for you. Your office door must actually remain open, either continually or during regularly scheduled and well-communicated time periods. This technique may not work for managers who must have frequent closed-door meetings. Employees should be encouraged to drop by and discuss their safety and concerns, without fear of reprisal, if they could not get satisfactory answers through normal supervisory channels. (See Appendix 3-1 for a discussion of "Walking the Fine Line."

Employees should not be required to make an appointment. That will discourage all but the most determined. Remember, you want to make this a casual, informal tool so that everyone will feel comfortable with it. Chances are once employees test your policy and word gets around that your door really is open, employees will not make frequent use of this access if your other systems are working well. Consequently, you need not be concerned about frequent visits that could disrupt your other duties. (See Chapters 4 and 8.)

The Bypass Meeting. If you cannot spend much time in operations areas, and your need for private meetings preclude an open door, you can schedule periodic bypass meetings. Here the top manager and hourly employees bypass middle-level personnel and talk directly to one another. These meetings are usually open for any questions, comments or concerns that employees may have, but they are particularly useful as a forum for health and safety issues. The size of the group probably should not exceed 200, so in larger businesses more than one meeting may be required to hear all employees. Some top managers choose to hold a separate bypass meeting with first-line supervisors and other managers with whom they do not regularly interact. You may need to try various group sizes before finding the one that best fits your style.

The success of a bypass meeting will depend on you, the top official at the worksite: whether you create a climate where employees feel free to speak up and how you handle the questions they raise. Treat all questions with respect, even if, from your perspective, the answer seems simple or the concern unwarranted. Try to imagine how the situation looks to the employee. Take the time to give a clear explanation. When you don't know the answer to a question, or when you need to know more about the circumstances surrounding an issue, don't be afraid to say so. Be sure, however, that you follow up thoroughly and that all employees who attended the meeting see or hear your response.

The Birthday Lunch. This is another, more personal version of the bypass meeting. The plant or site manager provides a lunch for all employees with a birthday during a given period. This kind of meeting usually works best when you keep it small (approximately 20 participants), but you may want to experiment with size. By grouping people by birthdate you get a reasonable random selection of employees from all parts of the worksite.

Try to steer the conversation to questions or concern that your employees may have. In a small group such as this some people may be frightened to speak up about perceived problems. Aim for a warm atmosphere that encourages a frank exchange. Otherwise, most of the suggestions for a successful bypass meeting also will hold true for the birthday lunch.

BEING AN EXAMPLE

Providing a good example is one of the most important ways management can become visibly involved in safety and health.

Following the Rules. Make sure you know all the rules that employees are expected to follow. Then make sure you and your subordinate managers follow them scrupulously. Your workplace may have some rules that apply o nly to people who will be working with specified equipment. To the extent practical, you and your managers should follow these rules also, even if you are just visiting for a few minutes and will not be working directly with the equipment.

Setting an Example for Supervisors. If you see an infraction of the rules or safe work practices, never let it go uncorrected. Your insistence on working in a safe and healthful manner will be a model for your supervisors.

TAKING CHARGE

Make it clear to everyone that you are in charge of ensuring that your site is a safe and healthful place to work. One technique widely used in the chemical industry is for the site manager to chair the central safety committee. But taking charge of safety and health protection also means holding your subordinate managers and supervisors accountable. And it means insisting that any contract work at your site be done in a safe and healthful manner.

Chairing the Central Safety and Health Committee. In its usual form the central committee is made up of the worksite executive staff. At some sites, hourly employees occupy two or three positions. Employee membership can be rotated throughout the hourly workforce to provide maximum training and awareness experience.

By chairing this committee, attending regularly and participating actively, you show your subordinate managers and employees that you are taking charge of safety and health protection. The committee, of course, must have serious tasks to accomplish, and it should meet at least monthly.

You should not confuse the central safety and health committee with a joint employee-management committee. For information on the latter, see Chapter 4.

Insisting on Accountability. Whatever your workplace's formal system of accountability, your employees will watch you for clues to what is important. If you never raise the subject of safety and health with your managers, they eventually will assume that you don't care. Therefore, it is particularly important for you to insist that managers and supervisors all up and down the line both carry out their own responsibilities and require employees to follow safe work practices. For a more detailed look at safety and health accountability, see Chapter 11.

Ensuring Safe and Healthful Contract Work. The actions of contract workers can have an adverse impact on the safety and health of everyone at the site. Where contract workers and your own employees are intermingled, any unsafe practices or conditions of contract work will jeopardize your own employees. But even if contract workers are removed somewhat from your normal operations, your employees will benefit from knowing that you insist on good safety and health practices and protection for every worker at your worksite.

Bidding Process. **You should insist that all potential contractors meet certain requirements as a qualification for bidding on your work:**

- **The contractor must have an acceptable level of experience modifier rate (EMR) set by the company's insurer.**
- **The contractor must have an implemented safety and health program.**

You or your agent should instruct all bidders to include in their costs any expenses necessary to meet OSHA standards and the rules of your worksite. Make sure potential contractors understand that you intend these precautions to be fully met.

Take special care with the company with no known experience. It may have gone by another name last year. There usually is a good reason for a name change, and it probably does not bode well for the performance you can expect.

Contract Language. **The contract you use should spell out precisely what you expect of the contractor's safety and health program management. If the contractor's work involves potential hazards to your workers and/or the community, then the skill, education and experience requirements for the contractor's employees should be specified. If you expect them to go beyond OSHA standards in certain areas, such as fall protection on a construction contract, then the contract should so state. The following requirements are frequently specified in contracts:**

- **Employee safety and health orientation and periodic safety and health training/meetings.**
- **A formally established relationship with a physician and contractor employees at the site who are trained in first aid;**
- **Regular safety inspections and, where applicable, industrial hygiene monitoring, with discovered hazards to be corrected promptly; and**
- **An appropriately trained safety and health coordinator.**

There also should be specific language in the contract giving your agent the right to:

- **Monitor safety and health activities,**
- **Investigate contractor accidents/incidents,**
- **Require that any worker who continues to violate safe work practices be removed from the site, and**
- **Remove the contract company from the site if the requirements of the contract are not being met.**

Further, the contract should require that your agent be informed of all chemicals or other hazardous substances the contractor intends to bring onto the worksite.

***Monitoring Contract Work*. Your routine general inspections should include those locations where contract work is being performed. Unsafe work or work violating any part of the contract should be halted and corrected through the appropriate supervisor, if possible. Your agent should check to make sure that contract employees are informed, not only about serious hazards to which they potentially may be exposed at your site, but also about hazards to which their own company's work may expose them. Obviously, your own employees also will need to know about, and be prepared to protect themselves against, any hazards associated with the contracted work.**

Arrange to include the contract employees in evacuation and other emergency drills. (You should also make plans for handling vendor employees and visitors to the site.) For more information, see Chapter 7 and OSHA Publication 3088 (Revised 1991), "How to Prepare for Workplace Emergencies."

***Follow Through*. Use the safeguards that you put into the contract. If you discover inexperienced laborers being assigned to work that involves significant hazards, despite repeated warnings and the contract clause requiring training, cancel the work and reopen bids. It may cost you some time, but that cost is insignificant compared to the potential loss o f time, money and lives if an unqualified contract worker makes the wrong moves.**

If, after being corrected and cautioned, certain workers continue to violate safe work practices, remove these workers from the site. If a contract company continues to violate rules or refuses to make corrections, then close the contract. You have the power and obligation to ensure safe and healthful conditions at your worksite.

Let it be known throughout your community that at your place of business only safe and healthful work is acceptable. Eventually, you will find that contract companies willing to insist on safe and healthful work also will be the most efficient and cost effective.

SUMMARY

As the owner or top manager at a worksite, your visible commitment to safety and health can make a major difference in the quality of worker protection. You can choose among a variety of formal and informal methods and styles for achieving this impact. Small businesses are probably better suited for the more informal approaches.

Prove to everyone in your company that you are vitally interested in worker safety and health. Do this by making yourself accessible: encourage your employees to speak up about safety and health, listen carefully, and then follow through. Set a good example: follow the rules, make time to carry out your safety and health responsibilities, and insist that your managers and supervisors do the same. Make sure everyone understands that you are in charge of a business where safety and health will not be compromised and where hazard awareness and safe work practices are expected of everyone, including on-site contractors and their workers.

APPENDIX 3-1

WALKING THE FINE LINE

If you are the owner or top manager of a business, you have delegated certain r esponsibilities to other worksite managers and supervisors. You want to avoid undercutting their authority since that would interfere with their ability to carry out those responsibilities. Simultaneously, you want to show your own commitment to reducing safety and health hazards and protecting your work force. How do you walk this fine line?

- **Put a complete safety and health program in place.**
- **Hold your managers and supervisors strictly accountable.**
- **Encourage employees to use the routine systems afforded to them by the safety and health program.**
- **Forge a partnership with your managers and supervisors that encourages employees to speak out and use the system.**

COMPLETE SAFETY AND HEALTH PROGRAM

Each method you use to improve workplace safety and health protection will work even better if complemented by the other techniques of good management. While the chapters of this manual separate safety and health program management into component parts, a functioning program is the sum of all those parts. Therefore, it would be a mistake to allow managers to pick and choose, using some program parts and not the rest.

This manual describes ways to implement OSHA's Safety and Health Program Management Guidelines. If you are setting up some version of what is described in all 12 chapters, you are probably providing a complete program. If you have any doubt, refer to Chapter 1 which provides the full text of the Guidelines and summary of what each part means.

In providing a complete safety and health program, you give your entire work force -- managers, supervisors, and rank and file employees -- the tools they need to work with you in keeping the worksite safe and healthful. A complete program addresses the needs and responsibilities of all employees.

ACCOUNTABILITY

Managers and supervisors held accountable for their safety and health responsibilities are more likely to press for solutions to safety and health problems than to present barriers to problem resolution. They are more likely to suggest new ideas for hazard prevention and control then oppose new ideas. By holding your managers and supervisors accountable, you encourage their positive involvement in the safety and health program. Your own involvement then is less likely to undercut or threaten their authority. For more information on developing accountability, see Chapter 6.

ENCOURAGING THE USE OF PROGRAM SYSTEMS

You have a full program in place, and you are holding your managers and supervisors accountable for carrying out their responsibilities. The next step is to encourage the rest of your work force to use the system built into the program and to do their part.

Encourage employees to take full advantage of opportunities to become involved in problem identification, problem solving and hazard reporting. Then, when they do become involved, make sure they get appropriate and timely management responses, including recognition and reward.

When your program's systems are working well most safety and health problems will be resolved before your employees feel the need to approach you directly. Big problems may arise, however, that the normal systems cannot handle. Your supervisors probably will understand that these problems are not a reflection on them, and that you are the proper person to address these concerns.

What should you do when an employee brings a problem or suggestion to your attention? Listen carefully! Then tactfully ask what attempts have been made already to solve the problem or submit the suggestion. In other words, what systems -- safety and health program mechanisms -- have already been used?

Perhaps the employee will respond that the supervisors were advised but no action was taken. This may suggest a problem within your program. Although unlikely, the problem may be a supervisor who genuinely does not care about having a safe or healthful workplace. Rather than approach this situation as a personal matter involving this supervisor, focus on how the system is not working. Maybe the supervisor did not understand the issue raised by the employee or could not explain to the employee why no action was necessary. Make clear to the supervisor's manager that you want the problem within the system to be resolved. If the supervisor's attitude is at least part of the problem, give the supervisor and the manager a chance to work it out. It is not a good idea to confront the supervisor based on one incident.

Obviously, if your accountability system is going to work, any individual who continues to present barriers to effective safety and health management will have to be held accountable. It is important, however, to try to separate any accountability activity from your immediate response to employee-raised questions, concerns or suggestions.

Remember, too, that your safety and health systems not only encourage employee involvement in identifying hazards and resolving problems, but also protect those employees from retaliatory and discriminatory actions, including unofficial harassment.

FORGING A PARTNERSHIP

Make sure your supervisors know you understand that not every safety or health problem can be solved at the supervisory level. Call upon your managers and supervisors to help make the employee input systems work. Think of your work units -- crews, departments -- as teams striving to identify and solve problems throughout whatever system mechanisms are needed.

Your managers and supervisors are the team leaders, working with you and the other players toward a common goal.

You may wish to reward or otherwise recognize the teams that are most successful at reporting hazards or suggesting new hazard control ideas. Recognition can be based on the number of reports and suggestions or on the quality of employee participation. Let your managers and supervisors know that when an employee brings a safety and health matter to your attention, you consider that a good reflection of the supervisor's leadership.

4.

CHAPTER 4

EMPLOYEE INVOLVEMENT

INTRODUCTION

The success of your business depends in large part on the men and women who work for you. Protecting their safety and health on the job makes good business sense. It also is the right thing to do. You need not face this considerable task alone. In this chapter we will show how employee involvement can strengthen your safety and health program.

OSHA's Safety and Health Program Management Guidelines recommend that all employers "provide and encourage employee involvement in the structure and operation of their [safety and health] program and in decisions that affect their safety and health." This chapter looks at some of the reasons behind this recommendation and some of the ways you can implement it. Different approaches are appropriate for union and non-union worksites; we will look at both. Finally, this chapter's appendices offer some concrete examples and suggestions that can help you get started.

WHY SHOULD EMPLOYEES BE INVOLVED?

Involving your employees in a program that directly affects their safety and health is the right thing to do. It is also the smart thing to do. Here is why:

- Rank and file workers are the persons most in contact with potential safety and health hazards. They have a vested interest in effective protection programs.
- Recent experience has shown that line workers and other rank and file employees make highly valuable problem solvers.
- Group decisions have the advantage of the group's wider field of experience. Research shows that employees are more likely to support and use programs in which they have had input.
- Employees who are encouraged to offer their ideas and whose contributions are taken seriously are more satisfied and productive on the job.

Close Contact With Hazards. You, the owner/manager, have a solid grasp of your overall operations. Line workers, on the other hand, probably have a more detailed knowledge of each operation at your worksite. They do the tasks that will either expose them to or protect them from potential hazards.

Employees with an understanding or workplace hazards will realize that they have the most to gain from preventing or controlling exposure to those hazards. Knowledgeable and aware employees tend to be safe workers and also good sources of ideas for better hazard prevention and control.

Value as Problem Solvers. For many years Japanese companies have used their workers to help solve various kinds of workplace problems. American companies are coming to recognize the value of employee involvement. Now, worker participation in the United States is most common in the area of quality control. Safety and health protection problems are even better suited to worker involvement for the reasons already explained.

Improved Support. Managers often complain that they cannot get workers to comply fully with required safety measures, whether that means wearing appropriate personal protective equipment or following safe work procedures. How do you change that?

Most of us do not like to have ideas forced upon us. We are more apt to support ideas we help develop and implement. Line workers allowed to participate in the rulemaking process have a personal stake in ensuring that the rules are followed.

Try involving employees in establishing rules and procedures. If enforcement remains a problem you still have the option to take disciplinary action.

Value of Group Decisions. Decision making by committee frequently gets a bad rap. But more often than not the complaint centers on the slowness of the process rather than on the quality of the product. Using committees may not be the fastest way to reach a decision. But group decisions are often the best. They benefit from the many points of view and varied experiences of the group's members. This added information can help produce better decisions.

There are several group exercises that show this. For example, first individuals, and then groups of these individuals, are asked to rank items in terms of their usefulness for survival in different hostile circumstances. These lists are then compared with ranking decisions made by experts. It is rare for individuals to come out ahead of groups even though the groups are made up of these same individuals.

MORE INVOLVEMENT MEANS BETTER WORK

Employees involved in helping their bosses uncover and solve workplace problems tend to enjoy their work more than those who simply do what they are told. When workers enjoy work they take a greater interest in their job tasks and are likely to produce a better quality product. They also are less likely to look elsewhere for jobs. Thus, reduce turnover often is a benefit of increased employee involvement.

WHAT CAN EMPLOYEES DO TO HELP?

Employees can participate usefully in just about any activity related to safety and health. The choices are yours. Examples of employee participation that consultation programs have witnessed include, but are not limited to:

- **Participating on joint labor-management committees and other advisory or specific purpose committees;**
- **Conducting site inspections;**
- **Analyzing routine hazards in each step of a job or process and preparing safe work practices or controls to eliminate or reduce exposure;**
- **Developing and revising the site safety and health rules;**
- **Training both current and newly hired employees;**
- **Providing programs and presentations at safety and health meetings;**
- **Conducting accident/incident investigations;**
- **Participating in decision making throughout the company's operations.**

Some of these activities require training if employees are to act proficiently. The training need not be elaborate and can be given at your worksite.

COMMITTEE PARTICIPATION

Joint labor-management committees are the classic method of employee participation. They are extensively and successfully used in many European countries and Canadian provinces. Other types of committees also have been used successfully for safety and health participation. At many unionized worksites employee safety committees -- with members selected by the union or elected by employees -- work alone, without management, on various tasks. At some worksites hourly workers participate on a central safety committee. In addition, some worksites use employee or joint committees for specific purposes, such as inspecting the site for hazards, investigating accidents and incidents, and training new employees. Finally, although they go by a different name, quality circles are another form of committee. They focus, at least part of the time, on identifying and resolving health and safety problems.

Classic Joint Labor-Management Committees. These committees usually have equal representation of labor and management. The chair may alternate between an employee representative and a management representative. There usually are quorum requirements and formal voting. The powers of the committees are worked out through negotiation. Although tasks depend upon the outcome of these negotiations, the committees typically conduct:

- Site inspections with oversight of hazard corrections,
- Investigations of employee reports of hazards,
- Accident investigations, and
- Safety and health awareness program development.

Sometimes the committees simply receive reports from the experts on these activities and monitor hazard correction and program effectiveness.

Other Joint Committees. In other joint committees there may be either more employee participants (for example, at construction site where several different trade unions represent workers) or more management participants (especially where medical, safety and industrial hygiene personnel are counted as management). These committees frequently are chaired by the highest ranking safety "specialist" at the site, but sometimes they are chaired by an hourly employee who is elected by the committee itself. They work by consensus and do not take formal votes. Their usual functions are similar to the classic joint committees.

Employee Safety Committees. These usually are union safety committees with membership determined by the union. Some worksites with more than one union will have more than one union safety committee. The committee operates without direct management involvement, but it meets regularly with management and management staff. At these meetings the committee raises concerns and management provides responses. The committee may conduct inspections and investigate employee reports of hazards, but it usually will carry findings to management for action. The committee also may design and present employee awareness programs.

Central Safety Committee. At non-union sites, particularly in the chemical industry, the central safety committee consists of the site manager and the executive staff. In recent years, some companies have discovered that it is helpful to have hourly worker representation on this committee. Some sites rotate employee participation on the committee so that all workers take part. At other sites management selects the hourly workers for their experience and achievements in other safety and health employee participation systems.

The central safety committee is an oversight committee with an interest in every part of the safety and health program. It sometimes serves as the hazard correction tracking system. As such, the committee receives reports of all inspections, accident/incident investigations, employee reports of hazards, and ensures that all reported hazards are tracked until resolved.

Specific Function Committees. Some companies use single-function standing committees very effectively. Employees are given the opportunity to volunteer for membership. These committees may consist of only employees with management liaison; or there may be joint membership with some management and/or safety and health staff (including plant nurse/doctor). Each committee has a single responsibility, such as accident/incident investigation, site inspections, site safety and health rules, safety and health training, or safety and health awareness programs. The company provides committee members with needed training and resources. Such resources might include assistance from site safety and health experts, reference materials, films and videos, or equipment (such as cameras) for accident and incident investigations or inspections.

Quality Circles. Quality circles are work groups usually formed to address quality problems. They spend some of their time brainstorming problems and solutions and frequently address problems that involve safety and health protection. The circles can address all aspects of a problem, not just quality or safety and health. For example, they also can look at productivity implications. Just make sure that part of their focus is to help you find and resolve safety and health problems.

CONDUCTING SITE INSPECTIONS

Employee involvement is common in site inspections. Inspections can be conducted by a joint committee, an employee committee that performs several functions, a single-function inspection committee, or an individual employee acting as safety observer.

Whatever method you choose, you must train these employees to recognize hazards. They also should have access to your safety and health "experts" and to written references. For meaningful participation, the committee or safety observer should be able to suggest methods of correcting hazards and to track corrections to completion. For more information on making site inspections, see Chapter 9.

Committee Inspections. The group making the inspection probably should not exceed four people in a given area. At sites where larger committees perform several functions, inspections can be done by a subcommittee. Where inspections are the only function of a large committee, inspection duties can be rotated or small groups can be assigned to different parts of the worksite.

Safety Observers. Some workplaces have safety observers who periodically check their areas for hazards. Some check every day for the first few minutes of the shift. Others do more thorough weekly or monthly inspections. The frequency should depend on the nature of the hazards and the size of the worksite.

Safety observers usually work with the area supervisor to get hazards corrected. Normally, they do their checking alone. Some companies periodically bring together their safety observers to brainstorm problems or ideas that extend beyond the individual work areas. For your safety observers' involvement to be fully effective, they should also be involved in correcting the hazards that they spot.

ROUTINE HAZARD ANALYSIS

Employees can be very helpful in analyzing jobs, processes or activities for hidden hazards and in designing improved hazard controls. Employees and supervisors frequently are teamed up to accomplish these activities. For complicated processes, the team probably will be led by a engineer. Many companies find that workers who are involved with the procedures or processes on a daily basis make excellent analysts.

Workers are more likely to accept the changes that result from these analyses if they are involved in the decisions that affect practices and processes. For more information on routine hazard analysis and job hazard analysis in particular, see Chapter 7 and OSHA Publication 3071, "Job Hazard Analysis."

DEVELOPING OR REVISING SITE SAFETY AND HEALTH RULES

Giving employees responsibility for developing or updating your site's safety and health rules can be very profitable. Employees who help make the rules are more likely to obey them and to remind others to obey them. Your employees, who possess an indepth knowledge of their work and their co-workers, can contribute significantly to improving and strengthening the rules.

TRAINING OTHER EMPLOYEES

Use your best qualified employees to teach safety and health rules and procedures and other topics to newly arrived workers. This technique can be very effective; it can even improve your ongoing training efforts. Many companies have seen excellent results from delegating responsibility for training of employees. For more information on safety and health training, see Chapter 11.

New Employee Orientation. Your hourly employees can make excellent instructors for new employees. You will want someone in management to present the personnel/employee relations portions of the orientation. Any other topics can be handled by appropriately trained rank and file workers. The trainer who provides this introduction to the job can follow up by acting as "buddy" and watching over the new employee, giving advice, and answering those questions that a newcomer might be afraid to ask a supervisor.

Ongoing Periodic Training. Many companies have found that making employees responsible for regular safety and health training sessions has two added benefits: it keeps interest in the sessions high, and it improves general safety and health awareness. Your employees will need some help from management to get started. They also will need management to provide ongoing assistance with new training ideas, materials, references, and other resources. You can involve employees in providing ongoing training by setting up a special committee, using a multifunction employee or joint committee, or simply rotating your workers through the training activity.

PROGRAM PRESENTATION

We already have discussed using employees to present safety programs and other training activities. You also can involve employees in planning and presenting awareness programs such as safety and health newsletters, award programs, and poster or slogan contests. Remember, if you decide to establish an award or reward program, never encourage the under reporting of injuries or illnesses by rewarding employees for "hours worked without injury" or similar ideas. For further information, see the discussion of reward programs in Chapter 8.

ACCIDENT/INCIDENT INVESTIGATIONS

Employees frequently participate in accident/incident investigations. This can be accomplished by involving a single-function committee or a committee with various r esponsibilities. Employees doing investigations need special training and appropriate equipment to perform successfully. For more information on accident/incident investigation, see Chapter 9 and the National Safety Council's publication, "Accident Investigation . . . A New Approach."

PERVASIVE PARTICIPATION

Although they are a small fraction of American workplaces, the number of facilities where employees are involved in all aspects of decision making is growing rapidly. Only a few years ago this type of participation was limited mainly to sites with highly trained and specialized employees. Now, workers whose skills have been developed primarily on the job can be found performing complex and sophisticated tasks such as computer analyses of product quality, production efficiency and safety questions. Operator groups work closely with engineers to solve workplace problems and design improvements.

Where a system of participation by all employees exists no special program is needed to involve employees; participation already is built into all operations. For companies that have not yet tried employee participation this method probably is not the best way to get started. As a long-term goal it may be desirable for any type of industry or workplace.

DIFFERENT APPROACHES: UNION VERSUS NON-UNION SITES

Employee involvement at unionized worksites is achieved differently from that at non-union worksites. Neither type of workplace, however, is necessarily more conducive than the other to successful employee participation in safety and health programs.

UNIONIZED SITES

Characteristics. Cynthia Burton and Edward Cohen-Rosenthal, quality of work life experts, describe employee participation at unionized workplaces as "building a mutually sustaining and rewarding marriage between two equal partners." They describe a union as a political organization with its own accountability system and its own culture, rituals and practices. An employer must accept and blend these special characteristics into the agreed-upon approach if a cooperative effort is to succeed.

Since a reduction in occupational illnesses and injuries is clearly beneficial to both workers and management, this goal lends itself to joint union-management efforts. The union will need to be involved in such a project from the very beginning. This particular goal of improved safety and health usually is easier to reach if removed from the normal collective bargaining channels. For example, some worksites have a clause in the collective bargaining agreement saying that safety and health are not subject to negotiation. Others require that personnel involved in the safety and health cooperative effort not be involved in contract negotiations or grievance resolution.

Usual forms of employee involvement. The most common form of cooperative, participatory effort is the joint labor-management safety committee. Sometimes, however, an all-employee safety committee will be used. (See discussion of committees above.)

The duties of the committees can range from reviewing hazard reports and suggesting corrections to conducting site inspections and handling accident investigations. Some committees are advisory while others have specific powers to correct hazards and, in some circumstances to shut down unsafe operations.

NON-UNION SITES

Characteristics. If you are accustomed to union workplaces you may believe that genuine employee involvement is impossible without a union. If you have always worked in non-union workplaces you may think that a program of employee involvement inevitably will lead to unionization. Neither view is necessarily correct. As Burton and Cohen-Rosenthal point out, "In non-union places, the methods require building one big happy family."

If you plan to establish a system of employee involvement at a non-union site, you may have to overcome considerable worker hesitation. Employees may need to be convinced that their participation is wanted and will be taken seriously. That includes protecting them from harassment when they get involved in safety and health activities. You face the task of starting to build a whole company or worksite "family culture." Since you do not want your employees to think of management as "them," you should not think of workers as "them." Everyone should be encouraged to begin thinking in terms of "we" and "us."

At both union and non-union worksites, employee involvement relies on respect. At union sites it is respect between representatives of organizations; at non-union sites it is respect among individuals.

A good way to initiate employee involvement is by asking your employees to suggest ways to get everyone involved in problem identification and resolution. This can be the first participative efforts.

Usual forms of employee involvement. Employee involvement takes a variety of forms at non-union sites. All of the methods for involving employees already discussed under the heading "What Can Employees Do To Help?" have been used at one non-union site or another.

Selecting employees. Because non-union employees are not acting as representatives in the role of authorized bargaining agent, they really are representing only themselves. This means a completely different approach to participation.

At many non-union sites employee involvement is rotated through the whole worker population. Programs receive the benefit of a broad range of employee experience, and the entire workforce benefits from increased safety and health knowledge and awareness. At other non-union sites employee involvement relies on volunteers. At still others employees are appointed to safety and health committees by their supervisors.

We do not recommend you hold elections at non-union sites for employees to select safety and health representatives since you could be found in violation of the National Labor Relations Act which prohibits employer involvement in the election of employee representatives.

The best method for employee participation at your worksite will depend on what you want to achieve. If improved employee awareness is a major objective rotational programs are a good choice. If high levels of skill and knowledge are needed to achieve your safety and health objectives volunteers or appointees who possess this knowledge and who hold their positions for several years may be preferable.

WHAT MANAGEMENT MUST DO

Management sets the tone. Unless you are in total support of getting employees involved, and unless your employees believe you want their involvement, efforts at participation will be difficult and probably unsuccessful.

Managers sometimes claim that safety committees, for example, only want to talk about "trivial" things like cafeteria menus. They may decide from this evidence that employees are either unwilling or unable to address the serious issues of worksite hazards.

Employees, on the other hand, often do not believe management actually wants their ideas on serious matters. Consequently, they may limit their efforts to "safe" topics such as cafeteria menus. It is essential that such mistrust and mis-communication between management and employees be corrected. You can do this by showing visible management commitment and positive action.

Here are some things we recommend you do to make employee involvement work:

- Believe that you will have a safe and healthful workplace, whatever it takes.
- Show your commitment through leadership.
- Communicate clearly to your employees that a safe and healthful workplace is a condition of their employment.
- Tell your employees what you expect of them.
- Give employees adequate training and resources for the job expected of them.
- Get as many employees involved as possible: brainstorming, inspecting, detecting and correcting.
- Put employees' safety and health participation work "on the clock."
- Take your employees' efforts seriously. Carry out their safety and health suggestions in a timely manner or take time to explain why they cannot be carried out.
- Make sure coworkers hear about it when other employees' ideas are successful.

SUMMARY

Time and again, employee involvement has been shown to improve the quality of workplace safety and health programs. Your workers are uniquely equipped to provide excellent assistance in a variety of areas. What they need are opportunities for participation, clear signals from you, and management leadership, training and resources. We have seen many workplaces where employees prove their value as problem solvers, rulemakers, site inspectors, investigators, committee members, trainers, hazard analysts, and able participants in a full range of safety and health efforts. For examples of employee involvement and suggestion on how to get started, see Appendices 4-1 and 4-2.

If your employees are unionized the culture of the union and its system of accountability must be recognized if a joint effort is to succeed. If your workplace is not unionized a "happy family" approach can pay off. In both situations you have the opportunity and responsibility to set a management tone that communicates your commitment to safety and health and demands a high-quality response from your employees.

APPENDIX 4-1

EXAMPLES OF EMPLOYEE INVOLVEMENT

NON-UNION SITES

A textile manufacturer with more than 50 plants (with employee populations of 18 to over 1,200), has established joint safety and health committees on all shifts at its facilities. All members are trained in hazard recognitions and conduct monthly inspections of their facilities.

A small chemical plant with 85 workers has involved employees in safety and health activities through an accident investigation team and a safety and communications committee consisting of four hourly and three management employees. The team investigates all accidents and incidents that occur in the facility. The committee conducts routine site inspections, reviews all accident and incident investigations, and advises management on a full range of safety and health matters.

Employee involvement at a farm machinery manufacturer with 675 workers includes active membership on several committees and sub-committees. Members change on a voluntary, rotational basis. These committees conduct routine plant-wide inspections and accident investigations. Employees also are involved in conducting training on a variety of safety and health topics. Maintenance employees are revising the preventive maintenance program.

A large chemical company with 2,300 employees has set up a dynamic safety and health program that encourages 100 percent employee participation. Its safety and health committee is broad and complex, with each department having its own committee structure. Subcommittees deal with specific issues such as off-plant safety, training, contractors, communication, process hazard analysis, management and emergency response. The plant-wide committee, which includes representatives from all departmental committees, is responsible for coordination. All committee members are heavily involved in safety and health investigations. They also act as channels for other employees to express their concerns. Members receive extensive training in accident investigations, area assessments and interpersonal skills.

A shipbuilding and repair facility with 7,600 employees has established an employee/management safety and health task force, with management and hourly employees represented equally. The task force addresses current safety and health issues and works toward resolving problems and implementing improvements in the safety and health program. It helps in safety and health inspections, accident and incident investigations, and communication of employees' concerns.

UNIONIZED SITES

Employee involvement at a paint manufacturing facility with 72 employees works primarily through the safety committee. Three members of the committee are hourly union employees, and three are salaried employees. Members participate in committee meetings, hold monthly plant inspections, and recommend safety and health related improvements to management.

An oil refinery with almost 400 employees involves its workers in a variety of ways. Employees act as safety and health monitors assigned to preventive maintenance contractors. They develop and revise safe work procedures. They are part of the team that develops and reviews job safety analyses. They serve as work group safety and health auditors.

A chemical company with 1,200 employees has found numerous ways to include its employees in the site's safety and health program. For example, the safety and health committee, which includes equal labor and management membership, has responsibility for a variety of activities including monthly plant inspections, accident investigations and examination of any unsafe conditions in the plant. Employees also are involved in process and operations review teams, safety inspection teams and quality teams. Two hourly employees work full-time at monitoring the safety and health performance of on-site contractors.

An electronics manufacturer with almost 5,800 employees has established a joint committee consisting of seven management and eight hourly employees. They conduct monthly inspections of preselected areas of the facility, maintain records of these inspections and follow up to ensure that any identified hazards are properly corrected. They investigate all accidents that occur in the facility. Committee members have been trained extensively in hazard recognition and accident investigation.

APPENDIX 4-2

GETTING EMPLOYEE INVOLVEMENT STARTED

MEET WITH EMPLOYEES

- Meet with employees in one large group (if not unwieldy) or in groups by shift or craft, depending on the nature of your worksite.
- Explain the safety and health policy of your worksite and the objectives that you hope to achieve.
- Explain that you want employees to help with the safety and health program. Ask for their suggestions.
- Try to use as many of the reasonable suggestions as possible in some visible way.

FORM A COMMITTEE

- Form a joint committee. It should be large enough to represent different parts of your worksite without becoming unwieldy.
- Try to have equal numbers of management and non-supervisory employees on the committee.
- Choose management members who have enough "clout" to get things done.
- Ensure that the safety and health staff serves as staff for the committee.
- If your worksite has collective bargaining agent allow that organization to decide the method for choosing non-supervisory members.
- If your worksite is not unionized you may wish to solicit the suggestions of employees as to the selection of non-supervisory members of the committee. Do not hold an election. You may inadvertently violate the National Labor Relations Act. (See page 4-10 for some ways to select non-unionized employees.)

HOW TO USE INVOLVED EMPLOYEES

- Employers most commonly involve their employees in the workplace safety and health program by having them conduct regularly scheduled, routine physical inspections. Employees work from a checklist.
    - Employees will need adequate and appropriate training.
    - They should be expected to help with decisions about hazard correction as well as hazard identification.
- You also may choose to ask the committee to study one or two difficult safety and/or health problems that management has been unable to resolve. If so, you must demand serious work and, in return, give the committee's suggestions serious consideration.
- Once the committee is well established and functioning successfully it will be in a position to suggest other ways to involve your workforce usefully in the safety and health program.

5.

CHAPTER 5

ASSIGNING SAFETY AND HEALTH RESPONSIBILITIES

INTRODUCTION

As a business owner or manager, you have ultimate accountability for the safety and health of your employees. You cannot delegate this accountability to others in your company. You can, however, expect others to share the responsibility for certain elements of the safety and health program.

If you own or manage a small operation, you may be questioning why you should share the responsibility for safety and health. You have a strong working knowledge of your business' everyday problems, and you are close to your employees. However, as your business grows and your workforce increases, being responsible for all the details of an effective safety and health program may become less feasible. It will be important to have a mechanism for delegating some of that responsibility.

For managers of large organizations, a method of clearly assigning safety and health responsibilities, authority and resources is an absolute necessity.

We recommend that you make use of written job descriptions. These documents can effectively:

- Clarify the specific safety and health responsibilities and authority of individuals, and
- Distribute responsibilities between supervisors and rank and file employees.

In this Chapter we discuss how to develop useful job descriptions that spread safety and health responsibilities throughout your organization. You will need to:

- Review your existing organizational structure,
- Decide what part each position should play in your total safety and health program and what level of authority and resources will be needed,
- Decide and assign the responsibilities for each position, and
- Discuss assigned responsibilities with the people involved.

THE VALUE OF WRITTEN JOB DESCRIPTIONS

An individual job description describes the most important characteristics and responsibilities of a position. An organization's job descriptions, when viewed collectively, describe the total company structure and work systems including the safety and health management system.

You may already have written job descriptions for all the positions in your company. This chapter will help you develop a safety and health section to add to these personnel documents and to include in your overall safety and health program. While some small businesses do not rely on written job descriptions, we believe that written statements are preferable to oral assignments with respect to safety and health responsibilities. Carefully written documents:

- Remove any doubt about the responsibilities and authority of each position;
- Enhance communication and coordination among jobs;
- Aid in determining whether all responsibilities have been accounted for within the organization and whether new tasks and responsibilities should be assigned; and
- Aid in developing job performance objectives and establishing performance measurements.

REVIEW THE EXISTING ORGANIZATION

Within every business there are people who should be involved in carrying out the safety and health program. On a sheet of paper or a form like the Appendix 5-1 Worksheet, list all the positions in your business. Use a separate sheet for each position. (You can group similar positions later.) See Appendix 5-2 for descriptions of the basic positions normally involved in a safety and health program.

DETERMINE THE SAFETY AND HEALTH ROLE OF EACH POSITION

What role do you want each position or group of positions to play in your safety and health program? What level of authority will the person holding this position need? Write a general statement of overall responsibility and authority for each position. This statement will correspond to the first three entries on the Appendix 5-1 Worksheet.

While authority is built into managerial and supervisory positions, you may want to make changes specifically relating to your safety and health program. If so, be sure you clearly state the scope of authority by showing supervisory relationships, the amount of money the position holder can spend or any other measures that describe what a person in this position can do without obtaining further approval. At this stage do not attempt to describe in detail each job's specific safety and health tasks. Here are some examples of safety and health roles:

> **The Owner: establishes and provides the leadership and resources for carrying out the stated company safety and health policy.**
>
> **Managers and Supervisors: maintain safe and healthful working conditions within their respective jurisdictions.**
>
> **Employees: exercise care within their work to prevent injuries to themselves and to their co-workers.**
>
> **Visitors, Vendors, Customers, and Subcontractors: comply with all safety and health regulations while on the premises.**

The people with responsibility in the following areas may have some additional general duties:

> **Safety: be fully responsible to the owner or manager for the direction and day-to-day operation of the safety and health policy.**
>
> **Engineering: ensure that all equipment that could affect the safety and health of employees is selected, installed and maintained in a way that eliminates or controls potential hazards.**
>
> **Purchasing: ensure that safety and health equipment and materials are purchased in a timely manner; and that new materials, parts and equipment are analyzed for potential hazards so that preventive measures or controls can be implemented; and that such materials, parts and equipment are obtained in accord with all applicable safety and health requirements.**

DETERMINE AND ASSIGN SPECIFIC RESPONSIBILITIES

You have decided who should be involved in your safety and health program. Now you need to develop written statements that specify what each person must do to help you meet program goals. This corresponds to the last entry on the Appendix 5-1 Worksheet.

Refer to Appendix 5-2 for some suggested safety and health responsibilities of several categories of employee. This is appropriate wording for job descriptions. Which of these responsibilities fit into your program? At what authority level and to which specific positions within your business should these responsibilities be assigned.

When writing out responsibilities for non-supervisory employees, be careful not to confuse these responsibilities with specific work rules and safe work practices. A brief, general statement about the employee's responsibility to understand and follow rules and safe work practices is more appropriate.

You should delegate the details for carrying out your safety and health program to the same people who are responsible for plant operations and production. In this way you build safety and health into the complete management system as firmly as production. Be sure that each assigned responsibility comes with the authority and resources needed to fulfill it.

COMMUNICATE WITH YOUR EMPLOYEES

After you have clarified the safety and health responsibilities of each position you must discuss this information to your employees. You may find it useful to combine all these written statements of safety and health responsibility into a single document. Then post it or circulate it to all employees involved. Discuss the job descriptions and responsibilities in face-to-face meetings with the employees who will be responsible for carrying out the program. Keep a copy of this document and periodically refer to it when meeting with employees for performance reviews.

SUMMARY

For your safety and health program to succeed you need to delegate responsibility to specific positions, departments and staff levels within your company. Follow these steps:

1. Review your existing structure.

2. Decide what part each job position should have within the overall safety and health program, and what authority and resources are needed to carry out this role.

3. Determine and assign safety and health responsibilities and write these responsibilities into each position's job description.

4. Communicate with the employees involved by discussing the responsibilities and authority in face-to-face meetings and circulated documents.

APPENDIX 5-1

WORKSHEET
SAFETY AND HEALTH PROGRAM RESPONSIBILITIES

All employees will be fully responsible for carrying out the provisions of our safety and health policy that pertain to operations under their jurisdiction. The responsibilities listed below are our minimum expectations. We encourage individual initiatives to curb losses.

JOB TITLE: _____

GENERAL STATEMENT:

_____
_____
_____
_____
_____

LIMITS OF AUTHORITY AND RESOURCES (Expenditures, reporting, authority to shut down equipment):

_____
_____
_____
_____

THE EMPLOYEE WILL BE RESPONSIBLE FOR AND HELD ACCOUNTABLE FOR:

_____
_____
_____
_____
_____
_____
_____
_____

APPENDIX 5-2

SAMPLE ASSIGNMENT OF SAFETY AND HEALTH RESPONSIBILITIES

PRESIDENT/OWNER/SITE MANAGER

- Establish a policy to hold the worksite in compliance with all applicable Federal or State standards and to provide safe and healthful work and working conditions for every person at the site.
- Provide the leadership and resources to carry out the stated company safety and health policy.
- Set objectives and support safety and health personnel and employees in their request for information, training, experts, facilities, tools, and equipment needed to conduct an effective program and to establish a safe and healthy workplace.
- Assign clear responsibility for the various aspects of the safety and health program. Ensure that employees with assigned responsibilities have adequate resources and authority to perform their duties.
- Hold accountable those employees (including managers and supervisors) with assigned responsibilities by checking to make sure they are meeting their responsibilities and by correcting or rewarding them, as appropriate.
- Keep in touch with employees and the company's safety and health activities, assist in giving direction and authority for those activities, and visibly show your involvement.
- Set a good example by following safety and health rules and safe work practices.
- Require all vendors, customers, subcontractors and visitors to comply with the company safety and health policy.
- Thoroughly understand the hazards and potential hazards that employees may be exposed to at the worksite. Ensure that a comprehensive program of prevention and control is set up and operating.
- Provide a reliable system for employees to report to appropriate managers any conditions and situations that appear hazardous. Ensure that responses to such reports are appropriate and timely.
- Encourage employees to use the established hazard reporting system(s). Guarantee a strict prohibition of retribution for all employees, supervisors and managers who use the system(s).
- Establish an inspection system, including self-inspections, and review the results periodically to ensure proper and timely hazard correction.
- Establish a plant preventive maintenance program to ensure proper care and functioning of equipment and facilities.
- Review accident reports to keep informed of causes and trends.
- Provide a medical program, emergency response system and first aid facilities adequate for the size and hazards of the worksite.
- Require periodic drills to ensure that each employee knows what to do in case of an emergency.
- Establish training programs that improve the ability of all employees, including managers and supervisors, to recognize and understand hazards and to protect themselves and others.

SAFETY AND HEALTH DIRECTOR/COORDINATOR

- Maintain safety and health expertise through training, reading, conferences and use of outside experts.
- Keep informed of and be able to interpret laws and standards dealing with employee risk reduction in this industry and illness and injury recordkeeping requirements.
- Act as the eyes, ears, and "conscience" of top management where employee safety and health are concerned.
- Working with managers, supervisors, hourly employees and experts as needed, develop a complete inventory of hazards and potential hazards, and plan a program of prevention and control.
- Evaluate the effectiveness of the plant preventive maintenance program in ensuring a safe and healthful workplace.
- Conduct a hazard analysis that includes hazard detection and plans for prevention or control whenever new equipment, facilities or materials are designed, purchased or used, and whenever new processes are designed.
- Provide technical assistance and support to production supervisors and employees in their safety and health activities.
- Assist management to ensure that appropriate general plant safety and health rules are developed, communicated and understood.
- Assist in or oversee the development of a system for consistent and firm enforcement of the rules and safe work practices.
- Assist management in providing adequate equipment for personal protection, industrial hygiene, safety and fire prevention.
- Inspect and/or assist in inspection of facilities to detect hazards that may have escaped established prevention and control mechanisms and to uncover any previously undetected hazards.
- Assist supervisors in investigating accidents and incidents such as property damage and near misses.
- Provide technical assistance to employees in the performance of their duties under the safety and health program.
- Assist in developing and providing safety and health training to all employees so that they will understand the hazards of the workplace and their responsibility to protect themselves and others.
- Oversee, analyze and critique periodic emergency drills to improve worksite emergency readiness.

PLANT SUPERINTENDENTS/DIVISION MANAGERS/DIRECTORS

- Provide the leadership and direction essential to maintain the safety and health policy as the fundamental priority in all operations.
- Hold all subordinate supervisors accountable for all assigned safety and health responsibilities, including their responsibility to ensure that employees under their direction comply with all safety and health policies, procedures and rules.
- Evaluate the safety and health performance of subordinate supervisors taking into account these indicators of good performance: low injury and illness experience; good housekeeping; a creative, cooperative involvement in safety and health activities; a positive approach to safety and health problems and solutions; and a willingness to implement recommendations of professionals.
- Ensure the safety of the physical plant including structural features, equipment and the working environment. Insist that a high level of housekeeping be maintained, that safe working procedures be established, and that employees follow these procedures and apply good judgement to the hazardous aspects of all tasks. Participate in regular inspections of the plant to observe safety and health conditions and to communicate with employees. Offer positive reinforcement and instruction during these tours, and require the correction of any hazards.
- Actively participate in and support employee participation in safety and health program activities. Provide timely and appropriate follow-up to recommendations made by any employee (or joint labor-management) group operating under the safety and health program.
- Make certain that all new facilities, equipment, materials and processes are analyzed for potential hazards before completion of design or purchase, that all potential hazards are prevented or controlled before their introduction into the worksite, that tools and machinery are used as designed, and that all equipment is properly maintained.
- Ensure that job hazard analyses are conducted periodically for all jobs, with particular emphasis on tasks known to be dangerous, so that hazards can be uncovered and prevented or controlled.
- Make sure that employees know about and are encouraged to use systems for reporting hazards and making safety and health suggestions, that they are protected from harassment, that their ideas are genuinely considered, and that their ideas are adopted when helpful and feasible.
- Ensure that prompt corrective action is taken whenever and wherever hazards are recognized or unsafe acts are observed.
- Make sure that all hazardous tasks are covered by specific safe work procedures or rules to minimize injury.
- Provide all necessary safety and health equipment and protective devices, and make sure employees understand and use them properly.
- Ensure that all injured persons, regardless of how minor the injuries, r eceive prompt and appropriate medical treatment.
- Ensure that all accidents and incidents are promptly reported, thoroughly investigated and properly recorded, and that safety award programs do not discourage reporting of any incident that must be recorded on the log.
- Keep abreast of accident and injury trends. Take proper corrective action, when needed, to reverse these trends.
- Ensure that all employees are physically qualified to perform their work.

- **Make sure that all employees are trained and, when necessary, retrained to recognize and understand hazards and to follow safe work procedures for each hazardous job.**
- **Ensure that supervisors hold periodic safety and health meetings to review and analyze the causes of accidents/incidents and to promote free discussion of hazardous work problems and possible solutions.**
- **Use the safety director to help promote aggressive and effective safety and health programs.**
- **Help develop and implement emergency procedures. Make sure that all employees have opportunities to practice their emergency duties.**

SUPERVISORS

- Supervise and evaluate worker performance, including each worker's safety and health behavior and work methods.
- Encourage and actively support employee involvement in the safety and health program. Provide positive reinforcement and recognition to outstanding individual and group performance.
- Obtain and maintain up-to-date knowledge and skills required to detect safety and health violations and other hazards, such as improperly functioning machinery, tools, or equipment.
- Maintain good housekeeping in your work area.
- Ensure that the plant preventive maintenance program is being followed and that any repair and replacement needs found during those activities are tracked to completion.
- Conduct frequent inspections, u sing a checklist, to evaluate your area's physical conditions.
- Investigate accidents thoroughly to determine how the situation can be made foolproof.
- Actively discourage short cuts. Consistently and fairly enforce safe work procedures and safety and health rules.
- Provide continuing on-the-job training in safe work procedures and the use and maintenance of personal protective equipment.
- Make sure each employee knows what to do in case of an emergency.
- Practice what you preach. Be thorough and conscientious in following the safe work procedures and safety and health rules that apply to the area.

EMPLOYEE RESPONSIBILITIES

- **Learn the rules. Understand them, follow them and avoid short cuts.**
- **Review the safety and health educational material posted on bulletin boards and distributed to work areas. If you do not understand something, ask questions.**
- **Take personal responsibility for keeping yourself, your co-workers and equipment free from mishaps.**
- **Be certain that you completely understand instructions before starting work. Avoid taking short cuts through safe work procedures.**
- **If you have any doubt about your safety or health when completing a task, stop and get instructions from your supervisor before continuing.**
- **If you have a suggestion for reducing safety and health risks, offer it. It is your responsibility to get involved.**
- **Take part in the employee participation system and support other employees in their assigned roles under the safety and health program.**
- **Make sure you understand exactly what your responsibilities are in emergency situations.**
- **Know how and where medical help can be obtained.**
- **Report all accidents and unsafe conditions and acts to your supervisor or use the system set up to allow reporting elsewhere.**

6.

CHAPTER 6

DEVELOPING ACCOUNTABILITY

INTRODUCTION

Why develop a specific accountability program? Because accountability must be inherent in any organization that hires and fires people, gives them raises, bonuses and promotions.

An example may help explain the importance and purpose of accountability. Imagine a sports organization with an owner, manager, coach and team players. Each person has specific tasks and responsibilities that are critical to the overall success of the team.

A system of accountability ensures that each person on the team fulfills his or her responsibilities. When players fail to show up for practice with no reasonable cause they are fined. If they perform poorly, for whatever reason, they fail to make the starting lineup. Players' contracts reflect trends in poor performance or relative value to the team, thus creating a form of personal accountability for performance. We have all heard of coaches and managers fired at the end -- sometimes even in the middle -- of a season. The potential for dismissal creates a very real sense of personal accountability between coaches and managers. For owners, consideration of profit and loss is a powerful motivator to do the job well. Reputation and public approval is a strong motivator for all team members.

One can readily see how important an accountability system is for a sports club and the purpose the system serves. Business also involves owners, managers, coaches (or supervisors) and players (the general staff). Each person on the team has his or her area of responsibility. Unfortunately, these areas are not always clearly defined, particularly in a small business. The organization's members may not understand that each person must perform at top efficiency to create a successful team.

Often the owner also functions as manager and supervisor. Supervisors are sometimes asked to double as managers or production workers as the need arises. This kind of flexible and undefined (yet often necessary) organizational structure in a small business can lead to breakdown in accountability. New responsibilities and business initiatives are not always accompanied by additional personnel and existing programs may suffer.

In large businesses, responsibilities frequently are so complex that some get neglected. Accountability also breaks down when responsibilities are assigned but the needed authority or resources are not provided.

The purpose of an accountability program is to help all team members understand how critical their performance is and to teach them to take personal responsibility for their performance. Accountability ensures that your safety and health program is not just a "paper tiger" with no real power to win its objectives. The following steps will help you ensure safety and health accountability.

SET A CLEAR GOALS AND ASSIGN RESPONSIBILITIES

Before you can hold people accountable for their actions you must be sure they know what is expected of them. They must have goals set for their personal performance.

Individual goals for safety and health stem from the overall company goal. The method for setting your company goal was explained in Chapters 2 and 5. By working with these guides you will have established your company's broad safety and health goal, the objectives leading to that goal, and a set of job descriptions with clearly delineated safety and health responsibilities.

The next step is to set individual performance objectives for employees with assigned safety and health responsibilities. These objectives must be understandable, measurable and achievable. It is your job to clearly establish who is responsible for performing specific tasks. Check your assignment of responsibilities to make sure that they specify who does what and that they are reasonably attainable. When objectives are unclear, the ball can easily get dropped, and it will be hard to figure out whose performance is lacking.

When you assign responsibilities to individuals, it is essential that you also delegate the necessary authority and/or commit sufficient resources. Few things can be more demoralizing to a conscientious employee than being given an assignment without the means necessary to carry it out. By providing the means you will be helping to ensure the accomplishing of objectives.

SET INDIVIDUAL OBJECTIVES FOR ACCOUNTABILITY SYSTEMS

Objectives for individuals should be based upon performance measures. These are indicators that tell you whether the person did or did not perform as expected. The following considerations will help you set reasonable objectives:

- Aim your objectives at specific areas of performance that can be measured or verified. "Improve safety and health performance in my department next month," is too general an objective to be useful. A better objective would be, "Reduce first aid injuries by 10 percent over the next month." Even more measurable are those objectives over which the manager or supervisor has complete control, such as, "Hold 30 minute safety meetings for all employees in my division every Monday morning."
- Objectives should be realistic and attainable but also should represent a significant challenge.
    - Appropriate authority is necessary. Example: A safety director's objective to improve the safety and health record in the Press Department is not directly attainable, because achievement is dependent on the performance of the Press Department supervisor and the workers supervised. An objective to determine specific classroom safety and health training needs, locate or develop the training, and notify managers of its availability is within the bounds of the safety director's authority and, therefore, is achievable.
    - Adequate training is necessary. Example: A supervisor's objective is to investigate all accidents and near misses that occur in his/her area and ensure future prevention. This objective may be unattainable if the supervisor has not received training in accident/incident investigation techniques and hazard recognition. The supervisor also may need training in the access to appropriate hazard correction technology.
    - Appropriate resources must be available. Example: A maintenance manager's objective is, "Ensure that all machinery is safe to operate." That objective will be unattainable without an appropriate budget for replacement parts and capital improvements. Similarly, if the manager is held accountable for a clean area at the end of each shift, but is not given enough staff to complete all tasks and finish the clean-up, an objective of clear aisles and work areas at shifts' end will be unattainable.
- Objectives need to be understood by all concerned parties. Use clear, understandable language that leaves no doubt what someone is required to do. Example: An objective is, "Investigate accidents to determine multiple causation." This may be unclear to a supervisor. "Investigate accidents to determine all causes and take corrective action within 24 hours of the accident," is a clearer, more specific objective.
- Objectives should be agreed to by those with responsibility for achieving them. Even when you and your supervisors agree on most issues, you should also discuss with them their safety and health performance objectives and secure their agreement or cooperation.

WRITE OBJECTIVES

Write each objective. State in specific terms what is to be achieved and to what degree. Include a deadline for accomplishing the objective. Try to keep the objective concrete and measurable. Later you will have to determine whether the objective has been achieved.

The very act of writing will help you clarify your meaning and intent. When questions arise there will be a document to which you and others can refer. The existence of this document will signal that you are serious about meeting the objective.

Examples:

- **Conduct weekly inspections in the department with emphasis on housekeeping, personal protective equipment, preventive maintenance and the wear of critical machine parts.**
- **Determine the causes of any accident occurring in the department, and take corrective action within 24 hours.**
- **Track to elimination all hazards identified through employee reports of hazards, accident/incident investigations and weekly planned inspections.**
- **Complete one job safety analysis each month for the department.**

Give a copy of the performance objectives to the employee for whom they were written. Refer to these objectives in future performance discussions with this employee.

REVIEW OBJECTIVES

Periodically review the performance objectives to make sure you are getting the desired performance and results. For instance, if a supervisor meets the objectives but the department continues to have too many accidents, too many close calls or no improvement in conditions, then the objectives need to be revised.

Performance evaluation can be verbal, written or both. An effective evaluation will include the following critical elements:

- It should be performed at specified intervals. If performance evaluation is new to your business, short intervals will be helpful at first. Unacceptable performance can be spotted and changed quickly. As your employees become accustomed to working toward defined performance objectives the intervals between evaluations can be lengthened. The evaluation can become an opportunity to provide encouragement and refresher training.
- The evaluation always should be performed against a backdrop of previously defined objectives (as discussed above). There should be no surprises to the person being evaluated regarding what was expected. Should problems develop, it may be necessary to modify the objectives to ensure that they are understandable, measurable and achievable. You may decide that your employee needs a more careful explanation of what is expected and possibly some additional training.
- Ideally the evaluation can be an opportunity for the evaluator and the person being evaluated to explore ways of improving both the system and the performance of the individual. Negative attitudes, such as refusal to listen to one another, animosity, blaming one another, or fear and intimidation serve only to limit the evaluation's usefulness.
- The goal of the evaluation session should be to encourage personal responsibility and the individual's efforts toward improving the performance of the team. Give positive reinforcement for a job well done. This commendation may, if possible, lead to more tangible rewards such as bonuses, awards, raises, etc.
- Both parties must be able to come to some agreement on needed changes in objectives or performance. If the evaluation determines that performance did not meet expectations some changes must be made. Sometimes the required changes will be obvious. In other cases, you may need to carefully explore the reasons for the objective not being met and discuss possible solutions.

- Perhaps the wrong person was assigned a particular responsibility. A simple change in assignments may alleviate the problem. Perhaps the level of authority of the assigned person needs to be increased. The objectives themselves may need to be modified and employees helped to develop capabilities that they do not presently possess (and for which they should not, therefore, be held accountable).
- The agreed upon changes must be incorporated into the already existing performance objectives. Many evaluation systems break down when managers fail to incorporate and implement changes.
- There must be a point where some predetermined consequences for poor performance begins.

Some task monitoring may be necessary to support the performance evaluation. For example, you may need to monitor a supervisor's accident investigations after each accident until it is clear that the supervisor has developed the necessary skills. This task monitoring can form the substance of later performance evaluations.

Keep in mind that the complexity and formality of your evaluations should be in keeping with the rest of your safety and health program.

SET CONSEQUENCES FOR FAILURE TO PERFORM ADEQUATELY

At first, as the employee learns new skills and changes behavior patterns, consequences for poor performance should be nil or minimal. Instead, use positive r einforcement during this initial phase of performance evaluation to encourage your employee's natural desire to do well and to be recognized.

Although the goal of any accountability program should be to develop a sense of personal accountability for actions, individuals often need to know there are negative consequences for poor performance. Consequences reinforce the importance of meeting objectives. Be sure that supervisors and managers understand when the consequence will occur. There should be no surprises.

Consequences need to be appropriate to the situation. Firing a supervisor for the first poorly conducted accident investigation is an obvious example of overreacting to a problem. Gradually, though, the consequences of poor performance should b e increased to some specified maximum severity. One common disciplinary system consists of 1) verbal warning, 2) written warning, 3) fines or suspensions, and as a last resort, 4) determination. You may find, however, that other consequences produce the desired results. You can experiment with a variety of consequences as long as your employees are fully informed of your intentions. See Chapter 8 for a further discussion of discipline in the workplace.

You may eventually conclude that the individual is not capable of handling the assigned responsibilities. Sufficient training and support through the accountability system have been documented, and poor performance continues. At this point the reason for the problem (inadequate capabilities, improper attitudes, etc.) should not be the issue. The maximum degree of consequence must be enforced. Otherwise other employees will conclude that consequences are not to be taken seriously or do not apply equally to everyone. This belief among employees will destroy any chance for an effective accountability program.

SUMMARY

An accountability system is essential if all the hard work and effort you spent in developing a safety and health program is not to be lost. However, there is more to an accountability program than enforcing punishment for "bad" employees (including managers and supervisors). The accountability program aims to methodically teach your managers and supervisors to take personal responsibility for their actions and the subsequent effect of these actions on the team.

This is achieved by:

- Clearly defining expected performance in written performance objectives;
- Periodically evaluating this performance jointly with individual employees;
- Allowing your employees the freedom to learn and develop in a positive, non-threatening atmosphere.

Your employees deserve to have a clear understanding of the nature, severity and timetable of consequences. The interaction between employer and employees provided by an effective accountability program allows your employees to choose for themselves: they can change their performance, they can attempt to change but ultimately acknowledge an inability to perform adequately, or they can choose to ignore your expectations and endure the consequences.

7.

CHAPTER 7

ESTABLISHING COMPLETE HAZARD INVENTORIES

INTRODUCTION

If you are to protect your employees from workplace hazards you first must understand just what those hazards are. Are you sure you know all of the potential hazards generally associated with your type of business and your specific working conditions?

A means of systematically identifying all workplace hazards would be useful. OSHA's Safety and Health Program Management Guidelines address such an inventory. The Guidelines recommend:

- Periodic, comprehensive safety, industrial hygiene and health surveys:
- Change analysis of the potential hazards in new facilities, equipment, materials and processes; and
- Routine hazard analysis, such as job hazard analysis, process hazard analysis or phase hazard analysis.

These three major actions -- comprehensive surveys, change analysis and routine hazard analysis -- form the basis from which good hazard prevention and control can develop. After hazards are recognized and controls are put in place, additional worksite analysis tools can help ensure that the controls stay in place and that other hazards do not appear. For a detailed discussion of these additional tools, such as inspections, employee reports of hazards, accident and incident investigations, and accident pattern analysis, you should refer to other chapters.

But first you need to understand the existing and potential hazards in your workplace.

COMPREHENSIVE SURVEYS

Comprehensive surveys are not the same as inspections. An inspection is often done by employees at the site. Comprehensive surveys should be performed by people who can bring to your worksite fresh vision and extensive knowledge of safety, health or industrial hygiene. Because there are few professional consultants equipped to do comprehensive surveys in all three areas, the best approach is to use a team consisting of three separate specialists: a safety professional, an industrial hygienist and an occupational health professional.

The occupational health professional can be a physician or a registered nurse with specialized training and experience in occupational health. A professional can assist the safety or industrial hygiene professional or do a separate health survey, depending on the circumstances at your site. For the selection criteria for occupational health professionals, see Chapter 10.

For small businesses, safety and industrial hygiene experts usually can be found in the OSHA-funded, state-run consultation service. Occupational health professionals sometimes can be found at local clinics and hospitals or may be no farther away than the plant nurse. Larger businesses can contract for safety and health expertise or find it at the company or corporate level.

If you use experts from within your company be on guard for "tunnel vision," which can lead to a failure to spot hazards in areas not directly related to your firm's primary function. You will want your maintenance shop, for example, to be just as safe as your production line. We frequently find unguarded saws and grinders, non-code electrical wiring and other basic safety hazards in areas that are outside the main production process but regularly used by employees.

For the industrial hygiene survey you should, at a minimum, inventory all chemicals and hazardous materials in the plant and review the hazard communication program. For many industries a survey of noise levels and a review of the respirator program will also be vital.

Questions to Ask Before Contracting for a Survey

To ensure that your worksite will receive the comprehensive survey envisioned by the Guidelines, you may want to ask potential surveyors certain questions:

- What type of training and experience has your prospective surveyor had?
  - How recent is it?
  - What is its scope? Is it limited to your industry only? Does it consist of only practical experience, without formal training?
  - If certified, is certification still valid or has it lapsed for lack of recent training or seminar attendance?

- Ask for references and check those where comprehensive surveys have been done recently.
  - Ask references whether any OSHA inspections occurred after the survey and if so, whether any serious hazards were found that the consultant had missed.
  - Find out what tools the consultant used and what was covered.
- What kind of information will consultant need in advance? A professional who is planning an in-depth survey will prepare by learning beforehand as much as possible about your worksite and its processes.
  - Both safety and industrial hygiene professionals will probably want to see a layout of your operations.
  - The industrial hygienist may ask for a list of the chemicals you use or the Material Safety Data Sheets (MSDSs) you have received from your suppliers and the types of processes in which you use them.
- What kind of test equipment will the consultant bring?
  - You should expect the safety professional to bring: a tape measure; a ground loop circuit tester to test electrical circuits; a multi-meter or Wiggins (for 220 and/or 440 volts only); a tic tracer (or similar equipment) to check wire or electrical equipment to see if they are energized; and a ground fault circuit interrupter tester.
  - The industrial hygienist should bring noise testing equipment and, depending upon the chemicals or other contaminants expected, sampling pumps or grab sampling devices.
- How long will the survey take?
  - It should take several times longer than a routine inspection of your worksite.
  - If the industrial hygienist does sampling, it should b e time-weighted, 8-hour or full-shift sampling to understand the overall exposure to employees.

How Will You Know the Surveyor Has Done a Thorough Job?

Here are some signs of a thorough survey:

- Safety professionals, industrial hygienists and occupational health professionals should start with your injury and illness logs and look for patterns.
  - The safety professional also may want to see other program documentation.
  - The industrial hygienist and occupational health professional will want to see your hazard communication program, and if applicable, your hearing conservation and/or respirator program.
  - The occupational health professionals will want to see your records of employee visits to clinics, first aid stations and other sites where treatment is given for work-related illness and injury. They will want to examine records of employee training in first aid, CPR and EMT. Baseline and follow-up testing records probably will be reviewed also.

- **The safety professional should start at the beginning of your process, where raw materials are brought in, and carefully go through all your processes, watching each operation and talking to employees until the point where your worksites' product is shipped out or otherwise completed. The process should include:**
  - **Watch how materials are handled and stored, checking the stability of storage racks and the safe storage of flammable/explosives;**
  - **Check the openings that expose moving parts for pinch points and other hazards;**
  - **Check hand tools and equipment and wiring in the maintenance shop;**
  - **Arrange to see operations on every shift and to observe any after-hours operations, such as clean-up or forklift battery recharging;**
  - **Show interest in how you manage your hazard prevention and control program;**
  - **Open every door and look in every corner of your facility;**
  - **Walk around the outside of buildings to check on such things as chocks for trucks at the loading/unloading docks, fork lift ramps, outdoor storage of flammable/explosives and any fueling areas;**
  - **Suggest target tasks for job safety analysis, especially those tasks that might involve ergonomic hazards; and**
  - **Assist in developing or improving your injury reduction program.**

- **The industrial hygienist and occupational health professional should start at the beginning of your production operation, observe all processes, talk to employees and follow the production flow to the point of shipping. They will want to:**

  - **Check your inventory of chemicals against what can be found in the worksite;**
  - **Determine what metals are used in any welding operations;**
  - **Check any production areas where eating or smoking is allowed;**
  - **Check for the possible presence of asbestos, lead carcinogens, etc;**
  - **If respirators are used, check whether you are using each brand properly, how each employee is fit tested, whether pulmonary function testing is done and how the respirators are cleaned, maintained, and stored;**
  - **Do full-shift sampling of contaminants thought to be present in order to understand the overall exposure to employees;**
  - **Watch the movements workers make in performing their jobs to see if there are existing or potential cumulative trauma disorders (CTDs) or other ergonomic hazards;**
  - **Possibly suggest processes for routine process hazard analysis; and**
  - **Help set up or improve regular monitoring programs for any contaminants or other health hazards found to be present.**

  Note: The items above are signs of a thorough survey. They do not constitute an exhaustive list of activities you should expect.

The baseline survey should provide the basic inventory of hazards and potential hazards of your worksite. This hazard inventory will be expanded and improved by what you learn from later periodic surveys, change analysis and routine hazard analysis. However, the foundation of your inventory is the baseline comprehensive survey. Consequently, it is very important that this initial survey be done well.

Follow-up Surveys

You need periodic follow-up surveys if you are to apply the rapidly growing scientific and engineering knowledge about hazards, their prevention and their control. These follow-ups also help uncover the hazards that develop as processes and procedures evolve over time. The necessary frequency of follow-up surveys will depend upon the size and complexity of your operations.

CHANGE ANALYSIS

Before making changes in the worksite, analyze the changes to identify potential hazards. Anytime you bring something new into your worksite, whether it be an entirely new building, a piece of equipment, different materials or a new process, you unintentionally may introduce new hazards. If you are considering a change for your worksite you should analyze it thoroughly beforehand. This change analysis is cost-effective in terms of the human suffering and the financial loss it prevents. Moreover, heading off a problem before it develops usually is less expensive than attempting to fix it after the fact.

An important step in preparing for a worksite change is considering the potential effects on your employees. Individuals respond differently to change, and even a clearly beneficial change can throw a worker temporarily off-balance -- literally as well as figuratively -- and increase the risk of accidents. You will want to inform all affected employees of the change, provide training as needed and pay attention to worker response until everyone has adapted.

The nearest state consultation program will look at plans, blueprints and photographs and will advise you on health and safety concerns. This assistance will not trigger an enforcement visit.

Building or Leasing a New Facility. Even something as basic as a new facility needs to be reviewed carefully to identify hazards it might pose. A design that seems to enhance production of your product and appears delightful to the architect may be a harmful or even fatal management decision. Have safety and health experts take a careful look beforehand at all the design/building plans.

Leasing a facility that was built for a different purpose at an earlier time increases the risk of acquiring health and safety problems. You should make a thorough review of the actual facility, plus the blueprints or plans for any renovations. One of the most obvious concerns in acquiring an existing facility is whether asbestos insulation is present and whether it is friable (flaking off in tiny particles). But you also may discover that something as easy to fix as a loose stair railing has gone unnoticed in the rush to renovate production areas.

Save frustration, money and lives: have e xpert safety and health professionals involved in the planning of any facility purchase or lease.

Installing New Equipment. An equipment manufacturer does not know how its product will be used at your worksite. Therefore, you cannot rely totally on the manufacturer to have completely analyzed and prepared controls or safe procedures for the product. Moreover, if the equipment is produced in a foreign country it may not meet clear requirements of U.S. standards and laws. Therefore, involve health and safety professionals in the purchase decision and in the installation plans.

Many companies also provide a period to test newly installed equipment. The company assigns its most experienced operators to watch for hidden hazards in the operations before full production begins. As with new facilities, the sooner flaws are detected the easier and cheaper corrections are likely to be.

Using New Materials. Before introducing new materials to your production processes research the hazards that the materials themselves present. Also try to determine if any hazards can occur due to the processes you plan to use with the materials.

The place to start is usually the manufacturer's Material Safety Data Sheet. An MSDS is required for all materials containing hazardous ingredients. It should arrive with each shipment. The MSDS should provide the information an industrial hygienist needs in order to analyze an ingredient which may pose a hazard, as well as the means to prevent or control it.

Some traditional materials, such as lead in paint, are dangerous to use but are replaceable with less hazardous mixtures. For other materials you may not be able to find adequate substitutes. You may need to establish controls for the hazards these materials present.

Starting Up New Processes. New processes require workers to perform differently. Consequently, new hazards may develop even when your employees are using familiar materials, equipment and facilities. Carefully develop safe work procedures for new processes. After the operators have become familiar with these procedures, perform routine hazard analysis (discussed below) to discover any hidden hazards.

Analyzing Multiple Changes. Often a big change is composed of several smaller changes. When you start up production of a new product chances are you will have new equipment, materials and processes to monitor. Make sure each new addition is analyzed not only individually but also in relation to the other changes.

Once you have analyzed the changes at your worksite, add this information to your basic inventory of hazards. This inventory is the foundation from which your hazard prevention and control program is designed.

When People Change. Worker changes that have safety and health ramifications can be divided into two basic categories. The first is staffing changes. A task previously done by one worker now is being performed by someone else. The new employee may bring to the position a different level of skill from the previous jobholder. Almost certainly each will possess a different degree of experience in performing the tasks, in following the specific work rules and procedures of the site, and in interacting with nearby workers. Especially in high hazard situations, these differences should be examined and steps should be taken to minimize any increased risk, both to the new employee and to anyone affected by the change. Chapter 10 offers a variety of training and job orientation methods that will help you to ensure a safe employee transition.

The second category of worker change is the sometimes sudden, sometimes gradual change that can occur in the individual employee. The change may be related to temporary or chronic medical problems, a partially disabling condition, family responsibilities, family crisis and other personal problems, aging, or the worker's response to workplace changes. An analysis of this change, followed by physical and/or administrative accommodations to ensure safe and healthful continued performance, sometimes may be appropriate, as for example when an accident affects an employee's functioning. At other times a less formal response will be more suitable.

It may be useful to remember that workplace hazards do not exist in a vacuum. The human element is always present, and the human condition is one of change. An effective manager will be sensitive to these changes and their potential effect on the safety and health of the individual and the company as a whole.

JOB HAZARD ANALYSIS

This is the most basic and widely used tool in routine hazard analysis. It is sometimes called job safety analysis. You begin by breaking down a job into its component steps. This is best done by listing each step in order of occurrence as you watch an employee performing the job. Next you examine each step to determine the hazards that exist or that might occur. Reviewing the job steps and hazards with the employee performing the job will help ensure an accurate and complete list. Manufacturer's equipment operating instructions or Material Safety Data Sheets (MSDSs) should also be considered.

Now determine whether the job could be performed differently to eliminate the hazards. Would it help to combine steps or change the sequence? Are safety equipment and other precautions needed? If a safer way of performing the job is possible, list each new step, being as specific as possible about the new procedure. If no safer way to perform the job is feasible, determine whether any physical changes will eliminate or reduce the danger. These might include redesigning equipment, changing tools, adding machine guards, using personal protective equipment or improving ventilation. Establishing a personal hygiene routine may be appropriate where toxic dust is a hazard.

Review these new safe work procedures with all employees performing the job. Obtaining their ideas about the hazards and proposed changes is an important part of this process. It will help ensure that your proposed changes are sensible and are accepted by the workers you are trying to protect. Many companies have experienced success in assigning the workers who perform the tasks to the job hazard analysis team.

Improvements in job methods can lead to reduced costs resulting from employee absenteeism and workers' compensation and often can lead to increased productivity. Detailed information on this important tool can be found in the OSHA Publication 3071, "Job Hazard Analysis."

PROCESS HAZARD ANALYSIS

A process can be defined as any series of actions or operations that convert raw material into a product. The process can terminate in a finished product ready for consumption or in a product that is the raw material for subsequent processes.

OSHA's Process Safety Management of Highly Hazardous Chemicals standard (Part 1910.119 of Title 29 of the Code of Federal Regulations) defines process for the purpose of the standard as any activity involving a highly hazardous chemical, including any use, storage, manufacturing, handling or on-site movement of such chemicals, or a combination of these activities. This standard aims to protect employees by preventing or minimizing the consequences of chemical accidents involving highly hazardous chemicals.

Two useful booklets dealing with the standard are OSHA Publication 3131, "Process Safety Management," and OSHA Publication 3132, "Process Safety Management - Guidelines for Compliance."

Employers should refer to the standard and its appendices to determine if they have processes covered by the standard and to take advantage of the standard's greater detail regarding requirement for establishing a process safety management program. Such a program includes conducting process hazard analyses. However, the concept of process safety management is relevant and useful to the full range of workplaces, not only those subject to the standard's requirements. We believe that any business aiming for a comprehensive safety and health program will benefit from conducting a process hazard analysis.

A process hazard analysis is a detailed study of a process to identify every possible hazard presented to employees. Every element of the process must be studied. Each action of every piece of equipment, each substance present, and every move made by an employee must be assumed initially to pose a hazard to employees. Process hazard analysis then is applied to show that the element either poses no hazard, poses an uncontrolled hazard, or poses a hazard that is controlled in every foreseeable circumstance.

Often the process hazard analysis will concentrate o n the specialized equipment used in the process. The equipment may be used to:

- **Move materials;**
- **Apply mechanical forces or concentrations of energy to materials (e.g., ionizing radiation, magnetic or electric fields, and lasers);**
- **Mix materials; or**
- **Bring the hold materials together and contain them, under either ambient or special conditions, for chemical or biological reactions, etc.**

Processes may be either batch or continuous. Some operations may be conducted remotely. There may be special instrumentation to monitor conditions at various stages in the process. These instruments will keep the operator informed and perhaps also directly control the process or shut down operations if a hazardous or otherwise undesirable condition is approaching.

The best time for an employer to conduct a process hazard analysis is when the process is first being designed, before equipment is selected. This review, in turn, will assist you in choosing process equipment for its effective, efficient, and safe operation. Be sure to consider the equipment's capacity for confining the process within predetermined safe limits. The type, number, and location of detectors you select for monitoring the process should ensure not only productive operation but also safe operation. Remember to take into account any substance or mixture of substances that could present fire and explosion hazards.

When you have selected your equipment, the information from the process hazard analysis will help you to develop an appropriate inspection and maintenance schedule.

Remember, even when a process initially appears to be so simple that hazard analysis during the design phase seems unnecessary, it needs to be done anyway. If the process is simple, and there are no known potential hazards, then the process hazard analysis likewise will be simple and will require very little time and expense. On the other hand, if things are not as simple as they seem the analysis may reveal potential problems that might have been overlooked otherwise. Correction at this early stage will save time, money, and possible injuries and grief.

Process hazard analysis will include hazards associated with:

- **Mechanical and chemical operations,**
- **Low and high temperature and pressure operations,**
- **Possible high levels of radiant energy,**
- **Direct contamination of employees, and**
- **Contamination of the air with toxic substances.**

Remember that toxic substances may be the raw materials entering the process, the intermediate products, the final products, or the by-products or waste products.

<u>Who Should Do the Process Hazard Analysis?</u> A team approach is the best approach for performing a process hazard analysis because no one person will possess all of the necessary knowledge and experience. Additionally, when more than one person is performing the analysis, different disciplines, opinions, and perspectives will be represented and additional knowledge and expertise will be contributed to the analysis. At least one member of the team should be an employee who has experience and knowledge of the process being evaluated. (See the standard at 1910.119(e) concerning makeup of the process hazard analysis team.)

Small businesses may need to hire expert consultants to assist in the development of the analysis. If you have a small business and you do not know whether your process requires a high degree of expertise, call for advice from your local office of the OSHA-funded, state-run consultation service.

OVERVIEW OF THE PROCESS

Start by writing down answers to the questions contained in the Appendix 7-1 worksheet. With the answers to these questions, combined with any additional information pertinent to your operation, prepare a detailed narrative report. Your report should be clear enough to be understood even to persons unfamiliar with the process.

Process Flow Chart. Unless your process is very simple, with only one or two steps, you should now prepare a diagram or flow chart of the process. The flow chart is a detailed expansion of the overview. It is prepared as a visual and verbal description of each step in the process, clearly relating each step to the others. A careful review of the flow chart should reveal any elements not considered in the overview. For an example of a process flow chart, see Appendix 8-2.

Hazardous Substances. Examine each substance in the process: raw materials, intermediate products, final product, by-products and wastes.

Be sure to look at all activity involving substances that could produce hazardous conditions or products. Consider the potential for the air's oxygen content being reduced in any inhabited space, especially confined spaces. Study the potential hazards of each substance -- toxicity, fire or explosive hazard, and others. (This is a requirement of 29 CFR 1910.1200(d).) See how each substance appears in the process and in what quantity. Is each hazardous substance being handled in a way that minimizes its hazard? Could a less hazardous material be substituted?

With these answers you can plan your program of prevention and control. Take the precautions necessary to protect your workers, beginning with substitutions and engineering controls. Establish work practices and use personal protective equipment (PPE) as necessary. The topic of hazard prevention and control is covered in Chapter 8.

Equipment. Look at all the equipment, from that used to bring in the raw materials at the beginning of the process to the equipment used to move out the products, by-products and waste products at the end of the process. It must be safe not only for the operator but also for other workers nearby.

Look at the materials handling equipment throughout the process. Examine all the machines used to bend, form, cut, grind, mill, smooth, or otherwise change the surface or contours of solid materials. Look at equipment used to weld, crimp, rivet or otherwise fasten one solid piece to another.

For liquids and gases there will be enclosed systems for transfer and storage, vessels for mixing, and reactor vessels that may be subjected to high or low temperatures and/or pressures. If there are exothermic reactions, reactions that release heat, are there adequate provisions for removing the heat? Look at any special equipment capable of producing hazardous levels of radiant energy.

Once you have determined the potential hazards you can plan your prevention/control by using the safest equipment, implementing engineering controls and work practices, and providing and ensuring the use of PPE as necessary.

Worker Exposure. Look at each worker's locations and actions throughout the workday. With what substances and equipment does the worker interact? Does the worker perform actions that result in a hazard for the worker or others?

Employee exposures to physical agents such as microwave radiation will have to be measured with special instrumentation. Air contaminants will have to be measured to determine exposure levels. Will air contaminant levels and worker exposure rise when outside doors and windows are closed at the end of summer?

Once you know the exposures you can plan you prevention/control employing engineering controls, work practices and PPE as necessary.

See Appendix 8-3 for a process hazard analysis worksheet.

PREPARING FOR THE UNPLANNED EVENT

When dealing with high hazard chemicals or v olatile explosives it is not enough to analyze only those hazards associated with normal operations, i.e., those times when the process works as expected. Using analytical tools such as "what if," "checklist," hazard and operability study (HAZOP), failure mode and effect analysis (FMEA), or "fault-tree" analysis can determine most of the possible process breakdowns. You then can design prevention/controls for the likely causes of these unwanted events.

"What if" analysis, appropriate for relatively uncomplicated processes, starts with points in the process where something could go wrong. You should then determine what else could happen and what all possible outcomes would be. You must plan additional prevention and controls for those possible unplanned events that could contribute to an undesirable outcome.

For more complex processes, the "what if" study can best be organized through the use of a "checklist." Aspects of the process are assigned to analysis team members with the greatest experience or skill in those areas. Operator practices and job knowledge are audited, the suitability of equipment and materials of construction is studied, the chemistry of the process and the control systems are reviewed, and the operating and maintenance records are audited.

Hazard and operability study is a method for systematically investigating each element of a system to uncover ways in which important parameters can deviate from the intended design conditions, and as a result, can create hazards and operability problems. Typically, an analysis team studies the piping and instrument diagrams (or plant model). The team analyzes the effects of potential deviations from design conditions in, for example, flow, temperature, pressure and time. The team then assesses the system's existing safeguards, the causes of a potential for system failure and the requirements for protection.

Failure mode and effect analysis is a methodical study of component failures. This review starts with a diagram of the process and includes all components that could fail and conceivably affect the safety of the operation. Typical examples are instrument transmitters, controllers, valves, pumps and rotometers. The components are listed on a data tabulation sheet and individually analyzed for their potential mode of failure, the effects of failure, detection methods and other factors. The last step in the analysis is to analyze the component data and develop recommendations for risk management.

In "fault-tree" analysis you start with an undesirable outcome that is possible, even if highly unlikely, given the potential hazards involved in your process. Then you trace back into the process to identify all possible events or combinations of events that would have to occur to produce that o utcome. Since this information is graphically represented using logic symbols in a determined sequence of events, you then can design prevention/controls to make it impossible or nearly impossible for them to occur.

For additional information on methodologies, see OSHA's Process Safety Management of Highly Hazardous Chemicals standard at 1910.119(e) and OSHA Publication 3133, "Process Safety Management - Guidelines for Compliance."

UPDATING THE PROCESS HAZARD ANALYSIS

After completion of the initial p rocess hazard analysis, the analysis should be updated at least every 5 years to ensure that it is consistent with the current process. This update is required for businesses covered by the standard and the analysis must be revalidated by a team meeting the standard's requirements.

PHASE HAZARD ANALYSIS

Phase hazard analysis is a helpful tool in construction and other industries that involve a rapidly changing work environment, different contractors and widely different operations. A phase is defined as an operation involving a type of work that presents hazards not experienced in previous operations or an operation where a new subcontractor or work crew is to perform work. Before beginning each major phase of work in this type of hazard analysis, the contractor or site manager should assess the hazards in the new phase. The assessment should not only coordinate appropriate supplies and support but also prepare for hazards that can be expected and establish a plan to eliminate or control them.

To find these hazards and to eliminate or control them, you will use many of the same techniques that you use in routine hazard analysis, change analysis, process analysis and job analysis. One major additional task will be to find those hazards that develop whe n combinations of activities occur in close proximity. Workers for several contractors with differing expertise may be intermingled. They will need to learn how to protect themselves from the hazards associated with the work of nearby colleagues as well as the hazards connected to their own work.

INVOLVING WORKERS IN ESTABLISHING THE INVENTORY

Whenever you can, use the special knowledge your workers have gained from their close involvement with equipment, materials and processes. You should encourage your employees to communicate openly with the professionals who do the comprehensive surveys. Workers frequently participate in change analysis of new equipment and/or processes because of their valuable insights into how things really will work. As mentioned above, many companies regularly include hourly operators in job hazard analysis. Employees can play a similar role in process hazard analysis. In addition to the benefit that you receive from their insights, they also profit. Greater understanding of hazards, prevention and control helps them do a better job of protecting themselves and their co-workers.

USING THE INVENTORY OF HAZARDS

You will use the surveys and analyses we have described to plan a program of hazard prevention and control. Chapter 8 explains this program. Briefly, you should prevent hazards by substituting less hazardous materials or equipment whenever possible Engineering controls that distance the worker from the hazard are the next best option. For the remaining hazards, d esign safe work practices, train your workers adequately in these practices and enforce them consistently. Use personal protective equipment where needed. In some rare instances, you may also need to establish administrative controls, such as worker rotations or more frequent work breaks.

SUMMARY

Establishing a complete hazard inventory is not as complicated as it may sound. It begins with having industrial hygiene, safety and occupational health experts conduct a comprehensive survey of your worksite to determine the existing and potential hazards. Periodic surveys, done at intervals that make sense for the size and complexity of your worksite, will bring into play any new engineering or scientific knowledge of hazards and their prevention. They also can help find new hazards that have evolved along with changing work procedures over time.

Change analysis prevents expensive problems before they occur. Individuals who are knowledgeable in worker health and safety can help in designing and plan for changes in your worksite. Change analysis uses elements of routine hazard analysis appropriate to the type of change being contemplated.

Routine hazard analysis also adds to your inventory. It enables you to control hazards that develop in work procedures or within processes, or that occur because of changes in the phases of the operation.

The tools and approaches used in the various types of hazard analysis tend to overlap. This overlapping helps ensure total coverage and a more comprehensive inventory on which to base your prevention program.

Involving your employees in the effort to inventory hazards is sure to pay off. Hazard surveyors will benefit from workers' practical knowledge. And employees will be better able to protect themselves and others as they become more knowledgeable about workplace hazards, prevention and controls.

When assessing workplace hazards do not overlook the human element. Whenever one employee is replaced by another the difference in skill and experience can mean increased risk to both the new worker and his/her co-workers. Many factors can affect an employee's ability to function; as an example, changes in an employee's health or personal life may affect work performance, and in turn, the level of workplace safety and health. These changes can either be sudden or gradual. A manager needs to be sensitive to these changes and willing to provide training and orientation, physical and administrative adjustments, or other accommodations.

APPENDIX 7-1

PROCESS OVERVIEW WORKSHEET

Begin your process hazard analysis by writing down answers to the following questions:

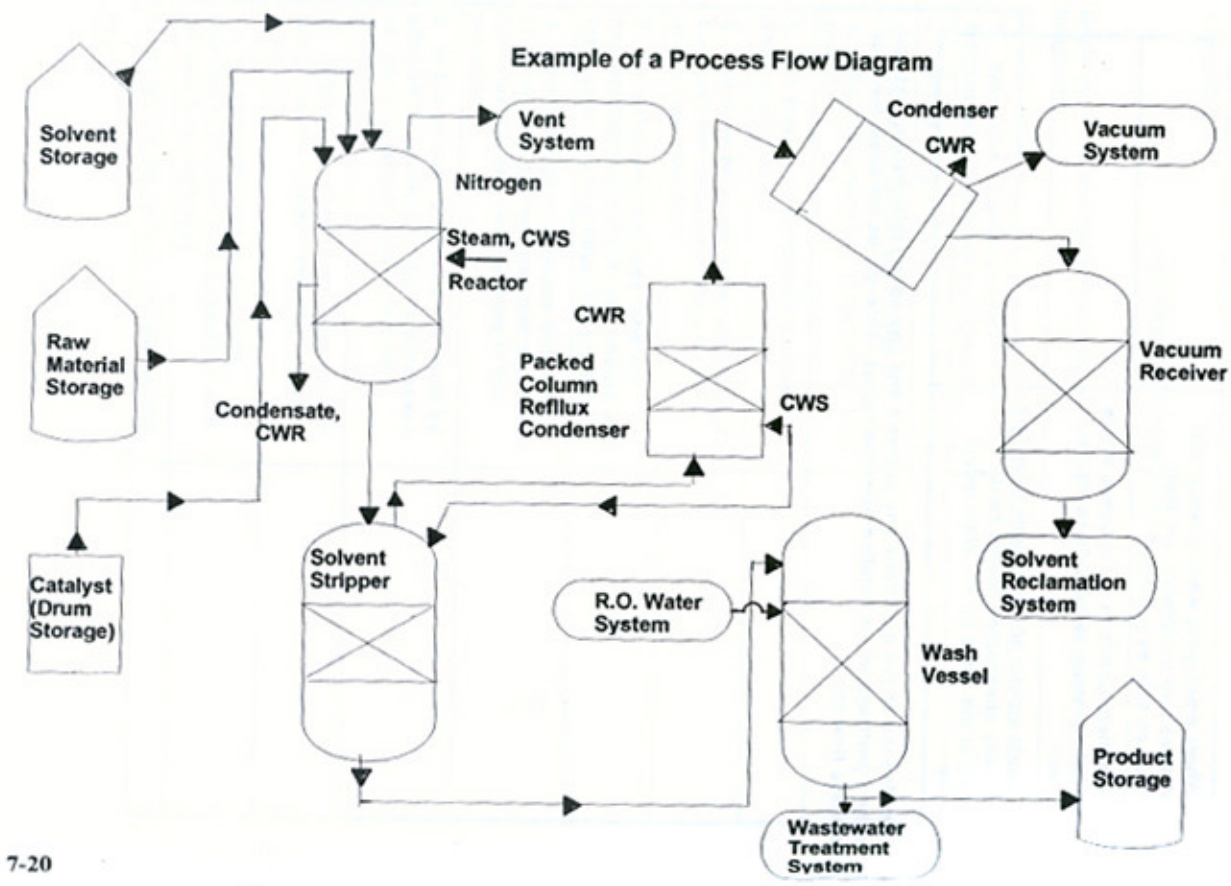
1. What kind of process is it? Mechanical? Chemical? Biological?	
2. What is the product?	
3. What is the rate of production?	
4. What raw materials will be used? How much?	
5. Will there be intermediate products? Their quantities?	
6. Will there be waste materials that will be a problem because of their toxicity and/or their quantity?	
7. Does this process pose inherent hazards that suggest that you should look for a saferway to product the product?	
8. Have there been previous incidents involving this process that had a potential for catastrophic consequences in the workplace?	
9. Is the process sited where it could be affected by a failure in nearby processes or where its failure could affect other processes?	
10. What kinds of equipment are used in the process? Is other, safer equipment available?	
11. Is there sufficient and reliable monitoring and control equipment? Is it fail-safe in all instances.	
12. What are the various workers' roles?	
13. Where employees work directly with substances and equipment, are their activities as safe as possible?	

14. Are there points in the process where workers' exposure to hazards could be reduced?	
15. Could emergency situations develop? How many u nexpected events could happen at the same time? What would result?	

Combine the above questions and answers and any added information that you believe pertinent into a detailed narrative report. This will be the basis for your process flow chart.

APPENDIX 7-2

EXAMPLES OF A PROCESS FLOW DIAGRAM



APPENDIX 7-3

PROCESS HAZARD ANALYSIS WORKSHEET

1. **Name the process.** _____

2. **Give the date the operations began.** _____

3. **Write a short description of the process.** _____
   _____
   _____
   _____
   _____

4. **Conduct an overview, write a narrative and attach it to this form. (See Appendix 7-1). Date completed?** _____

5. **Prepare process flow chart and attach. (See sample, Appendix 7-2). Date completed?** _____

6. **For each step in the process as shown on your flow chart, identify and record on the reverse side of this sheet each:**

   a. **hazardous substance,**

   b. **piece of equipment that presents a hazard, and**

   c. **employee operation that may be hazardous.**

8.

Chapter 8

ESTABLISHING HAZARD PREVENTION AND CONTROL PROGRAM

INTRODUCTION

You have conducted a comprehensive survey of your workplace to uncover existing and potential hazards. Now what are you going to do about them? The Occupational Safety and Health Act of 1970 requires that each employer "furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm . . ." (29 U.S.C. 651, Sec. 5(a)(1)).

In this chapter we will discuss the management systems used to prevent and control hazards. These include; control by engineering, safe work practices, personal protective equipment (PPE) and administrative arrangements; systems to track hazard correction; preventive maintenance systems; emergency preparation; and medical programs.

Emergency preparation is the subject of OSHA Publication 3088 (Revised 1991), "How to Prepare for Workplace Emergencies." We cover medical programs later in Chapter 9. Therefore, these areas will be touched upon only briefly in this chapter.

The goal of the hazard prevention and control program is to foolproof the workplace and its operations, to the extent feasible, to keep employees from being harmed. It is an ongoing program, one that is never finished. You will design and implement and then revise and improve preventive measures and controls as your worksite changes and as your store of hazard information grows.

The most frequent sources for updating hazard information are routine general inspections, employee reports of hazards and accident/incident investigations. (See Chapter 9.) Other good sources for hazard information updates are the ongoing job hazard analyses (OSHA Publication 3071), process and phase hazard analyses, change analyses and periodic comprehensive hazard surveys. (See Chapter 7.)

THE TERMINOLOGY OF HAZARD CONTROL

Hazards take many forms: air contaminants, tasks involving repetitive motions, equipment with moving parts or openings that can catch body parts or clothing, microorganisms, extreme heat or cold, noise, toxic liquids, and more. The terms we use here to describe the principles of engineering control may sound a little strange when applied to some of these hazards. You may find that others will use the terms somewhat differently. There should be agreement, however, about the concepts the terms describe.

ENGINEERING CONTROLS

To the extent feasible, the work environment and the job itself should be designed to eliminate or reduce exposure to hazards. This approach is called engineering control, but it does not necessarily mean that an engineer is required to design the control. Engineering controls can be very simple in some cases. They are based on the following broad principles:

1. If feasible, design the facility, equipment or process to remove the hazards and/or substitute something that is not hazardous or is less hazardous;

2. If removal is not feasible, enclose the hazard to prevent exposure in normal operations; and

3. Where complete enclosure is not feasible, establish barriers or local ventilation to reduce exposure to the hazard in normal operations.

Elimination of Hazards through Design. Designing facilities, equipment or processes so that the hazard is no longer even potentially present is obviously the best worker protection. Some examples of this are:

- Redesigning, changing or substituting equipment to remove the source of excessive temperatures, noise or pressure;
- Redesigning a process to use less toxic chemicals;
- Redesigning a work station to relieve physical stress and remove ergonomic hazards; or
- Designing general ventilation with sufficient fresh outdoor air to improve indoor air quality and generally to provide a safe, healthful atmosphere.

Enclosure of Hazards. When you cannot remove a hazard and cannot replace it with a less hazardous alternative the next best control is enclosure. Enclosing a hazard usually means that there is no hazard exposure to workers during normal operations. There still will be potential exposure to workers during maintenance operations or if the enclosure system breaks down. For those situations, additional controls such as work practices or personal protective equipment (PPE) may be necessary to control exposure.

Some examples of enclosure designs are:

- Complete enclosure of moving parts of machinery;
- Complete containment of toxic liquids or gasses from the beginning of the process using or producing them to detoxification, safe packing for shipment, or safe disposal of toxic waste products;
- Glove box operations to enclose work with dangerous microorganisms, radioisotopes or toxic substances; and
- Complete containment of noise, heat or pressure-producing processes with materials especially designed for those purposes.

Barriers or Local Ventilation. When the potential hazard cannot be removed, replaced or enclosed the next best approach is a barrier to exposure, or in the case of air contaminants, local exhaust ventilation to remove the contaminant from the workplace. This engineered control involves potential exposure to the worker even in normal operations. Consequently, it should be used only in conjunction with other types of controls, such as safe work practices designed specifically for the site condition and/or PPE. Examples include:

- Ventilation hoods in laboratory work;
- Machine guarding, including electronic barriers;
- Isolation of a process in an area away from workers, except for maintenance work;
- Baffles used as noise-absorbing barriers; and
- Nuclear radiation or heat shields.

GENERAL WORKPLACE RULES AND SAFE WORK PRACTICES

Many of your organization's general workplace rules have a bearing on safety and health. It is accurate to think of these rules as hazard controls.

In addition to the general workplace rules that apply to everyone, specific work practices may be needed to safeguard your employees in a variety of situations. For example, even when a hazard is enclosed there still will be times when exposure can occur: when maintenance is necessary, when the enclosure system suffers a partial or complete breakdown, or when enclosure does not fully control the hazard. By following established safety work practices for accomplishing a task safely (and using PPE in many cases), your employees can further reduce their exposure to hazard.

Workplace Rules. The safety and health rules that you develop and make part of your overall workplace rules are an important component of your hazard prevention and control program. These rules play a major part in identifying acceptable and unacceptable behavior. For example, you may have rules outlawing horseplay or violent behavior on company property, or requiring your employees to wear personal protective equipment.

Safety and health rules are most effective when they are written, posted, given to all affected employees and discussed with them. Many employers emphasize the link between safety and health rules and the consequences of breaking them by reviewing the rules with their employees. They then ask the employees to sign a statement at the bottom of the list: "I have read the rules, I understand them, and I have received an explanation of the consequences of breaking them." Employer and employee both keep a copy of this signed statement.

Some employers ask their employees to help develop the workplace rules and then to help revise them as needed. When employees play a role in formulating the rules they are more likely to understand and follow them.

For more examples of workplace safety and health rules and guidance in developing them, see Appendix 8-3.

Safe Work Practices. Some of these practices are very general in their applicability. They include housekeeping activities such as removal of tripping, blocking, and slipping hazards; removal of accumulated toxic dust on surfaces; and wetting down surfaces to keep toxic dust out of the air.

Other safe work practices apply to specific jobs in the workplace and involve specific procedures for accomplishing a job. It is necessary to conduct a job hazard analysis to develop these procedures. This process is clearly described with examples and illustrations in OSHA Publication 3071, "Job Hazard Analysis" and summarized here in Chapter 7.

Consultation projects recommend that the written analysis of a job be kept separate from the written procedures your workers will follow to accomplish the job safely. A good job hazard analysis is more detailed than a good work instruction sheet. Each document suffers from being combined with the other.

You may decide that a training program is needed, using the job hazard analysis as the basis for training your workers in the new procedures. A training program may be essential if your employees are working with highly toxic substances or in dangerous situations.

DRAWBACKS TO CONTROLLING HAZARDS WITH SAFE WORK PRACTICES

While safe work practices are a necessity and can work very well they are only as good as the management systems that support them. This is because they are susceptible to human error. The controls first must be designed from a base of solid hazard analysis. They then must be accompanied by good worker training, reinforcement, and consistent and reasonable enforcement. Safe work practices should be used in conjunction with, and not as a substitute for, more effective or reliable engineering controls.

Safe Work Practices Training. Anticipate resistance when teaching new job practices and procedures to workers. If your employees have done a job long enough without special precautions they are likely to feel unconcerned about hazards. It is essential that they understand why special work practices are needed. Therefore, training begins with a discussion of hazards. Your workers must be assisted in understanding that for an accident or injury to occur, two things must be present: a hazard and an employee. Remove the hazard and there will be no injury. Train the employee to follow proper work practices, and those safe work practices can significantly help the employee to avoid harm.

Just presenting training may not be sufficient. An employer has a responsibility to ensure that worker training has achieved its objective: that workers understand the hazards and know how to protect themselves. A supervisor can easily perform informal testing to check the results of training. This means stopping at an employee's work station and asking for an explanation of the hazards involved in the work and the employee's means of protection. If the training has been presented well and has been understood, each trained worker should be able to give a clear, comprehensive response.

Positive Reinforcement. Each supervisor should provide frequent reinforcement of work practices training. The informal testing described above serves not only to gauge training effectiveness but also to reinforce the desired behavior. Some worksites also provide special recognition for the use of safe work practices. Some supervisors periodically hand out "Thank you for working safely" cards that can be redeemed for a free cup of coffee or soft drink. Other supervisors periodically observe individual workers at their tasks and give oral and/or written feedback on what was done safely.

Award systems that recognize positive activities rather than absence of injuries are recommended. Award programs with prizes for hours worked without injury can put heavy pressure on workers not to report injuries.

Enforcement. Workers must realize that safe work practices are a requirement of employment and that unsafe practices will not be tolerated. It is necessary, therefore, that the employer have a disciplinary system that is implemented fairly and consistently. If no such system exists in your workplace, you would be wise to have employees assist in designing one. We discuss disciplinary systems in greater detail below.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

When exposure to hazards cannot be engineered completely out of normal operation or maintenance work, and when safe work practices cannot provide sufficient additional protection, a further method of control such as protective clothing or equipment should be used. These are collectively called personal protective equipment or PPE. The term PPE covers such items as face shields (whether worn by dentists or welders), steel-toed shoes and boots, safety glasses and goggles, hard hats, leather aprons and belly guards, metal-mesh gloves, forearm guards, respirators, and "space suits." Advertisements in safety and industrial hygiene magazines and exhibits at safety and industrial hygiene conferences suggest the full spectrum of available PPE.

Legal Requirements. One section of the OSHA standards (29 CFR 1910, Subpart I) specifically addresses PPE. Many other OSHA standards require certain types of PPE. If respirators are worn for any reason at your worksite, a written respirator program is required by OSHA standard. For further information about respirators, see OSHA Publication 3079 (Revised 1991), "Respiratory Protection." A useful general source of information is OSHA Publication 3077, "Personal Protective Equipment."

If you are not sure what is required or what types of PPE might be best for your employees call or write the nearest OSHA-funded, state-run consultation service in your state.

PPE Drawbacks. The limitations of work practices in controlling hazards also apply to PPE. Employees should have training in the use, care, limitations of and need for PPE. (See Chapter 11.) They also need positive reinforcement and fair, consistent enforcement. (See discussion below.) A significant drawback is that some PPE is uncomfortable and puts additional stress on employees, thus making it unpleasant or difficult for them to work safely. This is particularly true where heat stress is already a factor in the work environment.

Bearing the Cost. OSHA standards require employers to provide PPE whenever the equipment is for use only on the site. If the PPE can be used away from the site the employer is not required to pay for it.

Examples of personal protective equipment that would not normally be used away from the worksite include, but are not limited to, welding gloves, wire mesh gloves, respirators, hard hats, specialty glasses and goggles (such as those designed for laser or ultraviolet radiation protection, specialty foot protection (such as metatarsal shoes and linemen's shoes with built-in gaffs), face shields and rubber gloves, blankets, coverups, hot sticks and other live-line tools used by power generation workers.

Examples of protective equipment that is personal in nature and often used away from the worksite include non-specialty safety glasses, safety shoes and cold-weather outer wear of the type worn by construction workers. However, shoes or outerwear subject to contamination by carcinogens or other toxic or hazardous substances which cannot be safely worn off-site must be paid for by the employer.

Most employers provide the required PPE, with the exception of safety shoes and safety glasses. But even when employees must provide their own safety shoes, safety glasses or other PPE employers usually pay part of the cost.

ADMINISTRATIVE CONTROLS

Administrative controls include lengthened rest breaks, additional relief workers, exercise breaks to vary body motions, and rotation of workers through different jobs to reduce or "even out" exposure to hazards or to allow them to work part of the day without respirators or other burdensome PPE. They normally are used in conjunction with other controls that more directly prevent or control exposure to hazard.

Administrative controls are often employed to reduce ergonomic hazards. For example, employees in a meatpacking plant might rotate among several tasks to reduce accumulated stress on particular muscles and tendons. Administrative controls have also been used in situations of extreme temperatures, to counteract the dangers of widely toxic substances, and to counteract the dangers of widely used toxic substances such as lead.

INTERIM PROTECTION

When a hazard is recognized the preferred correction or control cannot always be accomplished immediately, However, in virtually all situations interim measures can be taken to eliminate or reduce worker risk. These can range from taping down wires that pose a tripping hazard to actually shutting down an operation temporarily. The importance of taking these interim protective actions cannot be overemphasized. There is no way to predict when a hazard will cause serious harm and no justification to continue exposing workers unnecessarily to risk.

HAZARD CORRECTION TRACKING

An essential part of any day-to-day safety and health effort is the correction of hazards that occur in spite of your overall prevention and control program. Documenting these corrections is equally important, particularly for larger sites. Documentation is important because:

- It keeps management and the Safety Department or the person in charge of safety and health aware of the status of long-term correction items;
- It provides a record of what occurred, should the hazard reappear at a later date; and
- It provides timely and accurate information that can be supplied to an employee who reported the hazard.

Notations on the Report Form. Many companies use the form that documents the original discovery of a hazard to track the correction of the hazard. Inspection reports include notations about hazard correction alongside the information about the hazard. Employee reports of hazards and reports of accident/incident investigations also should provide space for notations about hazard correction. (Chapter 8, Appendix 9-3 has three sample forms to use for employee reports of hazards, and each of them has a line for completed corrections.)

When recording information about hazard correction it is important to note all interim protective measures and to include the date of a completed action. Otherwise you run the risk of intended corrections never actually being completed. This may not pose a problem if the hazard can be corrected in a short period of time. Someone probably will remember to see that the final correction occurs. There is always a danger, however, that the expected correction will "slip through the cracks." This can happen when a part has to be ordered and time is needed for procurement or when interim, less than adequate measures become substitutes for preferred but possibly more costly or time-consuming actions.

Tracking by Committee. Some companies separate the tracking of hazard correction from the system that uncovered the hazard. Typically, either a central management safety committee or a joint employee-management committee will devote a part of each meeting to reviewing inspection reports, employee hazard reports and accident/incident reports. The committee will list in its minutes any remaining uncorrected hazards for continued tracking. The benefit of such a system is the high-level scrutiny applied to hazard correction tracking. The system can be cumbersome, however, especially when information must be transferred from the reports to the committee. There is the possibility of information being lost in transit or of incomplete and incorrect information being conveyed. This can be minimized by allowing the committee to review the original reports.

Tracking by Separate Form. Another way to track hazard correction is to transfer information from the original hazard report to a separate hazard tracking report. Ideally, this system receives information on all uncorrected hazards and not just information from one to the avenues for uncovering hazards. Tracking by separate form is most effective when computerized. (Appendix 8-1 contains a form that can be used for this system). For small businesses that do not use written inspection reports or written employee reports of hazards, this system provides important documentation that otherwise might not exist.

The weakness in this system is much the same as for tracking by committee. There is always a possibility that incorrect or incomplete information will be transferred or that a correction which needs tracking will fail to be recorded.

REWARD SYSTEM

Rewarding safe behavior is at least as important as correcting and punishing unsafe actions. Positive feedback can be a powerful motivator. It is especially important to recognize self-initiated acts of safety or health protection - those times when employees, of their own accord, act to protect themselves or others.

A reward system can be very simple and inexpensive: letters or certificates of appreciation, a few hours of paid leave, a special and convenient parking space for a month in the company parking lot, a small pin or tie tack. Evaluate your reward program periodically. If employees are showing signs of losing interest give your program a fresh charge with new ideas.

Rewarding an employee for good safety and health behavior not only recognizes the employee; it also provides incentive to other workers. Public recognition is likely to be more important than monetary value when distributing one-time awards. Of course, taking safety and health performance into account when promoting employees or issuing bonuses is probably the most meaningful reward.

One type of reward program can backfire and should be avoided. Rewards based on the least number of accidents can do more harm than good. They tend to create pressure on employees to avoid reporting injuries and illnesses. For best results, emphasize the positive; reward employees who demonstrate constructive safety and health efforts.

ROLE OF DISCIPLINARY SYSTEMS IN THE WORKPLACE

The disciplinary system does not exist primarily to punish employees. Its purpose should be to control the work environment so that workers are protected and accidents are prevented. A disciplinary system helps ensure workplace safety and health by letting your employees know what you expect of them. It provides workers with opportunities to correct their behavior before an accident happens.

A disciplinary system is one of the keys to successfully implementing your safety and health program. It ensures that your rules and safe working practices are taken seriously by employees and are actually followed. It lets employees know how you expect them to operate in relation to the goals of your safety and health program. And it lays out the actions you will take if individuals do not meet your expectations.

A disciplinary system cannot work in a vacuum. Before you can hold your employees accountable for their actions, you first need to establish your safety and health policy and disciplinary rules. Then you need to develop safe operating procedures, train your employees on these procedures and supervise their actions. The worksheet in Appendix 8-2 will be useful for businesses planning to establish a disciplinary system for the first time.

Policy Statement. Employees need to know where you stand on safety and health and what you expect of them. They need a clear understanding of the rules and the consequences of breaking those rules. This is true in all areas of work, but it is especially important for worker safety and health. As part of the policy statement, or in an employee manual or booklet, you should have a written statement setting forth your disciplinary policy.

Employee Information and Training. It is important that employees understand the system and have a reference to turn to if they have any questions. Therefore, in addition to issuing a written statement of your disciplinary policy, you should draw up a list of what you consider major violations of company policy and less serious violations. This list should specify the disciplinary actions that will be taken for first, second or repeated offenses.

Training can reduce the need for disciplinary action. Instruct your employees in the importance of workplace safety and health, the need to develop safety habits, your operation's safe work practices and the hazards they control, and the standards of behavior that you expect. Be sure your employees understand the disciplinary system and the consequences of any deliberate, unacceptable behavior.

Supervision. Supervision includes both training and corrective action. Ongoing monitoring of your employees work and safety habits gives you and/or your supervisors the opportunity to correct any problems before serious situations develop.

In most cases, effective supervision means correcting a problem before issuing any punishment. Where the relationship between employees and their supervisors is open and interactive problems are discussed and solutions are mutually agreed upon. This type of relationship fosters a work environment where the need for disciplinary action is reduced. When such action is needed, the parties are more likely to perceive it as corrective than punitive.

Employee Involvement. You may want to involve your employees in setting up or revising your disciplinary system. Employees who contribute their ideas to workplace rules and disciplinary actions are more likely to be knowledgeable about the system. They are more likely to understand the system is designed to protect them against the unsafe acts of others. Of course, at sites with collective bargaining agents you will need to involve employee representatives.

Employees should be encouraged to assist in the enforcement of rules and practices. The intent here is not to turn employees into spies and informants, but to encourage them to be their "brother's keeper" and to watch out for the safety and health of their colleagues. Many employers successfully have encouraged an atmosphere -- a company "culture" -- where employees readily speak up when they see an easily corrected problem; for example, a co-worker who needs reminded to put on safety goggles.

Your employees deserve the opportunity to correct their own behavior problems. An effective disciplinary system is a two-way process. Once a problem is spotted discuss it with the employee, who should be given at least one or two opportunities to change the behavior or correct the problem. Only after these discussions (and possibly some retraining) should disciplinary action be taken.

Appropriate Control Measures. Disciplinary actions need to be proportionate to the seriousness or hazardousness of the offense and the frequency of its occurrence. It is certainly inappropriate to issue only oral warnings to an employee who repeatedly removes a machine guard. Appendix 8-3 contains a list of suggested safety and health violations for inclusion in general workplace rules. Appendix 8-4 provides examples of disciplinary actions in three, four, and five-step disciplinary systems.

Disciplinary procedures should not be instituted without explanation. Be sure to provide feedback to the employee on what behavior is unacceptable, why the corrective action is necessary, and how the employee can prevent future violations and disciplinary action. In addition, take time to recognize an employee who improves or corrects the unacceptable behavior.

Consistent Enforcement. If your disciplinary system is to work well and be accepted by your workforce, you must assure your employees -- in word and deed -- that the system applies equally to everyone. This includes subjecting managers and supervisors to similar rules and similar or even more stringent disciplinary procedures.

Documentation. One key to ensuring fairness and consistency in a disciplinary system is keeping good records. It is in the best interest of both the employer and the employee to have written rules and disciplinary procedures. It is just as important to document instances of good or poor safety and health behavior, including discussions with the employee, and to place relevant information in the employee's personnel file.

Documentation serves a variety of purposes. It helps you to track the development of a problem, corrective actions and the impact of measures taken. It provides information which helps keep employees informed of problems that need correction. When you are evaluating the managerial and supervisory skills of your supervisors it provides a useful record of how they handled problems.

If warnings, retraining and other corrective actions fail to achieve the desired effect, and if you decide to discharge an employee, documentation becomes even more critical. Conversely, you may want to consider an annual clearing of the personnel files of employees whose good overall safety records are marred by minor warnings.

PREVENTIVE MAINTENANCE

You may not associate preventive maintenance with your safety and health program. Nonetheless, good preventive maintenance plays a major role in ensuring that hazard controls continue to function effectively. Preventive maintenance also keeps new hazards from arising due to equipment malfunction.

Whenever systems are enclosed the enclosure usually depends on the smooth functioning of pipes, valves, pressure releases, etc. Malfunctions of these parts of the enclosed system may result in hazards to workers. Ventilation systems that control hazards rely on the proper performance of duck work, fans, and filters. Many guards are electronic or electrically energized and require maintenance for continuing smooth operation. Equipment that is not hazardous under normal conditions may become so if it malfunctions. Clearly, preventive maintenance is a vital link in any safety and health program.

Scheduling. Preventive maintenance requires reliable scheduling of maintenance activity. The scheduling, in turn, depends on knowledge of what needs maintenance and how often. The whole point of preventive maintenance is to get the work done before repairs or replacement must be done.

Maintenance needs survey. A preventive maintenance program starts with a survey of maintenance needs at the worksite. Every piece of equipment or part of a system that needs maintenance, such as oiling, cleaning, testing, replacement of worn parts or checking, should be surveyed. You will need a complete list of all items to be maintained. If such a list does not exist at your worksite you should require your maintenance supervisor to develop one. The survey should be repeated periodically and the list of items updated. The list should be revised whenever new equipment is placed in the worksite.

Maintenance timetable. Once the complete list is developed a timetable must beestablished. For each item on your list, estimate the average length of time before the maintenance work becomes reactive rather than preventive. Plan to perform the maintenance before that average time. (Maintenance should be performed at least as often as recommended by the manufacturer). Review maintenance documents periodically to see how much reactive maintenance (repair or replacement of defective parts after failure) has been done. Then make new estimates of average time, and adjust your maintenance timetable accordingly.

Posted or computerized schedules. Make sure the preventive maintenance schedule will help your maintenance staff plan its work. A well communicated schedule also will help to ensure the maintenance department's accountability for performing the work on time. Select a method of communication that works well for your employees.

Maintenance Documentation. Preventive maintenance can be a complicated matrix of timing and actively. But keeping track of completed maintenance tasks can be as simple as adding a date and initials to the posted work schedule. Some employers use their computer system to keep track of completed maintenance activity.

Documentation can help identify and reward employees whose efforts have prevented costly repairs and accidents/incidents. It also can be instrumental in your effort to require accountability of employees responsible for maintenance.

EMERGENCY PREPARATION

This topic is more thoroughly covered by OSHA Publication 3088 (Revised 1991), "How to Prepare for Workplace Emergencies." Here we will consider only the most important general points.

The Nature of Emergencies. During emergencies hazards appear that normally are not found in the workplace. These hazards may be the result of natural causes such as earthquakes, tornadoes, hurricanes, floods or ice storms. Events caused by humans and beyond your control may create hazards, for example, train or plane accidents, terrorist activities, or occurrences at nearby worksites that affect your site. Finally, emergencies may occur within your own systems due to unforeseen combinations of events or the failure of one or more hazard control systems.

Emergencies, by their nature, are not part of the expected, everyday routine. They may never occur, but if they do their cost in terms of both dollar losses and human suffering can be enormous. Your job is to become aware of possible emergencies -- not merely probable events -- and to plan the best way to control or prevent the hazards they present.

Survey of Possible Emergencies. Just because a particular emergency has never occurred does not mean that it never will. Therefore, your emergency preparation should begin with a survey of all possible emergency occurrences by the general categories b elow, taking into consideration the unique characteristics of your worksite and its location.

Natural disaster. Review each type of natural disaster that has occurred in your geographical area and consult experts on the chances of other types of natural disasters happening.

Human errors or deliberately caused disasters beyond the control of your worksite. Consider the environment of your worksite. Are you near an airport or on an airport's landing/takeoff pattern? Is there a train track used to carry products other than those that you ship or receive? If so, is it near enough so that an accident involving release of toxic materials could impact your worksite? Are there chemicals or other dangerous sites in your neighborhood that could have internal emergencies that might affect your worksite? Have there been terrorist activities against other plants belonging to your company? Against plants involved in similar processes or products?

Hazard control failures at your worksite. **Ask yourself, what are the worst things that could possibly happen as a result of conditions here? Every worksite has some potential for fire. Some have much greater potential than others.**

Emergency Planning. After listing all possible emergencies you must plan actions to reduce their potential impact on your workers' safety and health. Some actions will be appropriate in all emergency situations. But the measures required by some types of emergencies may differ from or even contradict those needed in other emergency scenarios. Plan what first aid or medical response is needed and where that response will come from. If you are relying on outside medical or emergency response organizations establish communications with them and plan together for emergencies. If possible, have these outside resources participate in your drills.

Employee Information and Training. Your employees need to be informed of the emergency plans that require their participation. Each employee needs to know precisely what is expected in each type of emergency.

For most emergencies, employees should be drilled in the actions you expect them to take. You want their responses to become second nature, so that they will be able to protect themselves and others regardless of the stress of the moment. Fire and evacuation drills should be held annually. For other types of emergencies, such as tornadoes or earthquakes, drills should follow a predetermined schedule based on the frequency and/or probability of the event.

MEDICAL PROGRAMS

Medical programs provide occupational health care, both onsite and nearby. This care consists of approaches to both identifying health problems that may be work-related and responding to injuries and illnesses that occur. The size and complexity of a medical program will depend on the size of the worksite, its location in relation to health care provider organizations and the nature of the hazards at the worksite. Medical programs are covered in detail in Chapter 10, so only summary information is offered here.
You must always be prepared to offer first aid at your worksite. In fact, this is required by OSHA standard [29 CFR 1910.151(b)] for worksites that are not close to medical facilities. We strongly advise that both first aid and CPR assistance be available on every shift at your worksite regardless of distance to medical facilities.

Medical programs consist of everything from a basic first aid and CPR response to sophisticated approaches for the diagnosis and resolution of ergonomic problems. The nature and extent of your medical program will depend on a number of factors. Small business employers can contact the OSHA-funded, state-run consultation service for assistance in deciding what type of medical program meets their site's needs. If use of nearby medical facilities appears to be the best arrangement, be sure to meet with representatives of that facility to discuss your medical needs.

Whatever medical program you decide on, it is important to use medical specialists with occupational health/medical training. Not every nurse or doctor is trained to understand the relationships between the workplace, the work and certain medical symptoms.

SUMMARY

You should approach each category of workplace hazard with the intention of totally preventing it. If total prevention is not feasible you should control the hazard as completely as possible through work and equipment design. To the extent that potential exposure exists despite the designed controls then you should use safety and health rules, work practices and PPE to control that exposure. Finally, you may choose to employ administrative controls to further reduce levels of individual exposure.

To complement these hazard controls, the following components are also necessary: good systems of preventive maintenance, hazard correction tracking, fair and consistent enforcement of rules, work practices, PPE, a solid system for responding to unexpected emergencies, and a good medical program that helps identify hazards and minimize harm when injuries and work-related illnesses occur.

These are the basic components of a hazard prevention and control program. With these measures, you can provide your employees with comprehensive protection from occupational hazards.

APPENDIX 8-1

SAMPLE FORM FOR TRACKING HAZARD CORRECTIONS

Instructions: Under the column headed "System," note how the hazard was found. Enter Insp. for inspection, ERH for employee report of hazard or Acc. for accident/incident investigation.

Under the column headed "Hazard Description," take as many lines as you need to describe the hazard. In the third column, provide the name of the person who has been assigned correction responsibility. In the fourth column, list any interim action to correct the hazard and the date performed. In the last column, enter the completed corrective action and the date that final correction was made.

TRACKING HAZARD CORRECTIONS

SYSTEM	HAZARD DESCRIPTION	ASSIGNED TO:	DATE INTERIM ACTION	DATE ACTION COMPLETED

APPENDIX 8-2

DISCIPLINARY SYSTEM WORKSHEET

The nature and severity of disciplinary action should be appropriate for the seriousness and frequency of the violation. Below are a series of questions designed to help you develop a disciplinary system that best meets the needs of your workplace. You already may have addressed the first two areas when you developed safe work practices for various jobs. If you have not yet developed these practices, it makes sense to do so before developing a disciplinary system. Other workplace problems, such as attendance and attitude, are equally important but are not addressed here.

1. **Operations. What key operation(s) occur at your workplace? What equipment is used? By whom? What materials are used, and by whom? Are there any hazards associated with the use of the equipment or the materials?**

2. **Practices and Procedures. What are the key types of jobs at your workplace? What do most people do in the course of their work? What is the most efficient way for them to perform their jobs? What is the safest way for them to perform their jobs? (Note: You will need to perform a job hazard analysis to properly answer this. For information, see OSHA Publication 3071, "Job Hazard Analysis.")**

3. **Problems. What would happen if a job or a procedure was not done safely? Exactly what would happen if an employee performed in an unsafe or unhealthful manner? What would happen if all employees did the same thing? How serious would the consequences be? Would the unsafe action or behavior affect just one employee or all employees?**

4. **Correction. For each type of safety and health violation you have identified, what kind of corrective action seems appropriate? What would you do for a second offense or for repeated violations of the same rule? Should warnings be oral or written? How long a suspension is warranted for what type of violation? Are there any actions that should automatically result in termination?**

For this last stage in developing a disciplinary system you may find it helpful to develop a grid like the one on the next page to identify corrective actions for different kinds of violations and repetitions. In the example below, a few types of safety problems are listed on the left and their frequency across the top. Fill in each box with the type of corrective action that you consider appropriate. Examples include oral warning, written warning, re-instruction, suspension, and termination

VIOLATION	FIRST OFFENSE	SECOND OFFENSE	REPEATED VIOLATION
Unsafe work habits			
Refusal to follow safety instructions			
Unsafe actions that jeopardize self and others			

APPENDIX 8-3

DEVELOPING GENERAL WORKPLACE SAFETY AND HEALTH RULES

It is useful to make a list of the kinds of violations that are considered major or serious and a second list of other types of behavior that, while not as serious, are still not acceptable. The following suggested rules can be a starting point.

Major Offenses:

- **Failure to follow rules regarding use of company equipment or materials**
- **Horseplay in work areas or otherwise creating unsafe conditions**
- **Tampering with machine safeguards or removing machine tags or locks**
- **Not wearing required PPE**
- **Provoking or engaging in an act of violence against another person on company property**
- **Using or being under the influence of alcohol or illegal drugs on the job**
- **Major traffic violations while using a company vehicle**
- **Other major violations of company rules or policies**

General Offenses:

- **Minor traffic violations while using company vehicles**
- **Creating unsafe or unsanitary conditions or poor housekeeping habits**
- **Threatening an act of violence against another person while on company property**
- **Misrepresentation of facts or falsification of company records**
- **Unauthorized use of company property**
- **Other violations of company policy and rules**

Link each type of offense to a structured procedure for corrective action. Your goal is to make sure that the corrective action is appropriate to the seriousness of the violation; that employees are given the opportunity to correct their own behavior; and that the system is workable, and consequently, used and useful.

GENERAL WORKPLACE SAFETY AND HEALTH RULES

Written Warning	**No safety glasses** **Horseplay** **Unsafe work habits** **Violation of other safety or health rule or regulation**
Suspension (8 hours without pay)	**Three or more safety or health violations of the same type** **General overall record of unsafe practices** **Refusal to follow safety and health guidelines or instructions**
Termination	**Excessive and repeated safety and/or health violations** **Purposely ignoring safety and/or health rules** **Unsafe actions that seriously jeopardize the safety or health of others** **General disregard for safety and health of self and others**

APPENDIX 8-4

EXAMPLES OF SEVERAL-STEP DISCIPLINARY SYSTEMS

Most disciplinary systems use corrective procedures that involve three, four or five steps. These are described briefly below.

THREE STEP SYSTEM

First Violation	Written warning; copies to employee and employee's file.
Second Violation	Written warning; suspension without pay for 1/2 or full day.
Third Violation	Written report for file and immediate termination.

FOUR STEP SYSTEM

First Violation	Oral warning; notation for personnel file.
Second Violation	Written warning; copy for file or Personnel Office.
Third Violation	Written warning; 1 day suspension without pay.
Fourth Violation	Written warning and 1 week suspension or termination if warranted.

FIVE STEP SYSTEM

First Violation	Instruction/discussion concerning violation, proper procedures and the hazards they control; notation for supervisor's file.
Second Violation	Re-instruction with notation in the employee's personnel file.
Third Violation	Written warning describing the violation and actions that will be taken if it recurs.
Fourth Violation	Final warning; may include suspension.
Fifth Violation	Discharge

NOTE: The use of these corrective procedures obviously will vary with the nature of the problem and the frequency with which it occurs. Violations of company rules generally are considered more serious than other employee behavior problems but all require correction. Keep in mind -- and tell your employees -- that your primary goal is to control unsafe acts and conditions in order to prevent accidents.

9.

CHAPTER 9

CATCHING THE HAZARDS THAT ESCAPE CONTROLS

INTRODUCTION

In the ideal safety and health scenario the employer knows precisely the hazards and potential hazards to which employees could be exposed and has designed a perfect system of prevention and control. In real life some hazards may escape detection during the inventory process. Others have a way of slipping out of the controls set up to protect workers. You need ways to catch these hazards and get them controlled, or better controlled, before anyone gets hurt.

OSHA's Safety and Health Program Management Guidelines recommend a complete worksite analysis to provide the basis for hazard prevention and control. This analysis includes identifying all hazards and potential hazards through comprehensive surveys, change analysis and routine hazard analysis; regular site inspections; employee reports of hazards; accident and near miss investigations; and analysis of injury and illness trends over time.

We addressed comprehensive surveys, change analysis and routine hazard analysis in Chapter 7. In this chapter we will cover:

- Regular site inspections,
- Employee reports of hazards,
- Accident and near miss investigations and
- Analysis of trends of illnesses and injury.

These four tools help fill in any possible gaps left by the measures described in Chapter 7. At the same time, they help in the rapid discovery and correction of hazards for which controls have failed at least temporarily. These tools also contribute to the "foolproofing" that attempts to keep human error from causing or allowing controls to fail.

REGULAR SITE INSPECTIONS

Inspections are the best understood and most frequently used tool of worksite analysis. Much has been written about them and many inspection checklists are available in other publications. For a general checklist for small businesses or a starting point for larger businesses, use the checklist found in OSHA Publication 2209, "OSHA Handbook for Small Businesses."

In this chapter, we will consider some aspects of inspections that are frequently not covered in other publications.

What Do We Mean By Regular Site Inspections? The term inspection refers to looking closely at something to see if it meets requirements. At your worksite, several kinds of inspections probably are done, some of them at fixed intervals. In the OSHA Guidelines for Safety and Health Program Management, the term "regular site inspections" means a general inspection of every part of the worksite to locate any hazards that need correction. This includes routine industrial hygiene monitoring and sampling.

Inspection Frequency. The regular site inspection is done at specified intervals. We recommend that medium and large fixed worksites be inspected completely at least every quarter, with some part of the inspection occurring each month. Site inspections should be done at least weekly for construction sites because of the rapidly changing nature of the site and its hazards.

At small fixed worksites the entire site should be inspected at one time. And even for the smallest worksite, inspections should be done at least quarterly. Inspections should be done more often if the small worksite uses hazardous materials or involves hazardous procedures or conditions that change frequently.

What Should Be Inspected? A methodical inspection will follow a checklist based on the inventory of hazards and the preventive actions and controls designed to reduce or eliminate worker exposure. Regular site inspections should be designed to check each one of those controls to make sure that hazards are contained. Some suggested broad areas for inspection are listed in Appendix 9-1.

Hazards may be controlled by engineering. Examples of engineering controls are the guards placed on equipment to prevent hand or body contact with tools or machinery that can cut or pinch body parts or catch clothing, hair or body parts and pull them into the machinery. These guards should be checked during inspections to make sure they are in good working order and remain in place during operations. Another example of an engineering control of hazards is the ventilation system that carries away air contaminants. The velocity of the ventilation system should be checked periodically. Depending on the risk of the contaminant controlled, periodic air sampling may also be needed.

You also can control hazards with specifically designed work practices and procedures. An example is the precautions taken by a production equipment operator when restarting after a jam. The inspector should keep an eye out for any unauthorized modifications of these work practices.

Still another way to control hazards is through personal protective equipment (PPE). Meat cutters, for example, should wear protective mesh gloves. Many varied types of worksites require safety glasses or hearing protection devices in designated areas. The inspector will want to examine the equipment to ensure its good condition. Just as important, the inspector should see whether employees are wearing required PPE and whether the equipment is being worn appropriately. This includes, for example, stopping workers who have placed disposable hearing protection only part way into their ears and have left most of the plug protruding. The inspector will insist that the PPE be worn as intended.

Do not overlook areas outside of the production mainstream. Your search for common hazards and OSHA standards violations should cover the entire worksite. In addition to the checklist in the "OSHA Handbook for Small Businesses," you may find useful the inventory list at the back of this chapter.

Who Should Inspect? Ideally, medium and large worksites will have more than one type of regular site inspections.

Supervisors. Many employers make it the supervisor's responsibility to inspect the work area at the beginning of every shift to ensure that equipment and personnel are ready to work safely. This can be particularly helpful when other shifts use the same area and equipment or when after-hours maintenance and cleaning are routinely done. Supervisors' inspections of their own areas should not substitute, however, for the broad general inspection recommended in the OSHA Guidelines. There are two reasons for this:

- Those who work in an area can start "not seeing" things that they get used to. It is always good to have cross-inspections where supervisors or employees from one area look at another area.
- A general site inspection will encompass areas not assigned to individual supervisors, for example, outdoor and other common areas.

Employees. Involve employees in the safety and health program, in both identification and resolution. (See Chapter 4). One way to do this is to have the employee committee or the joint employee-management committee conduct routine inspections. By employing this method, you:

- Expand the number of people doing inspections, and therefore, improve the odds of finding hazards; and
- Increase employee awareness of the safety and health program.

Safety and Health Staff. It is most common and most logical for the staff personnel who specialize in safety and health to conduct the inspections. Even when other employees conduct inspections it is also wise also to involve the specialists. In a small business, the specialist may be the Human Resources Director or another member of management with many important duties in addition to safety and health. By having the safety and health staffer conduct inspections you:

- Keep the person responsible for safety and health in touch with the successes and/or problems in the hazard prevention and control program and
- Use your greatest in-house source of expertise.

What Training Should Inspectors Have?

Employees. All employees should understand the potential hazards to which they might be exposed and the ways they can protect themselves and their fellow workers. (See Chapter 11.) Those who are involved in inspections need training in recognizing and controlling all the potential hazards of the worksite. They will also need written guidance, tips for inspecting and some on-the-job training by safety and health staff or other specialists.

Supervisors. All supervisors should have training in the hazards that workers under their supervision are likely to encounter plus training in how to control these hazards. (See Chapter 11.) When they are responsible for area inspections, supervisors also should have specific training in how to inspect. Formal coursework may not be necessary, but the training should be provided by someone who is knowledgeable.

Safety and Health Staff. Personnel responsible for developing the safety and health program should have, at a minimum, the equivalent of the OSHA Training Institute Course #501, "A Guide to Voluntary Compliance in Safety and Health." Additional training is needed for large worksites and small worksites with hazardous operations or materials.

For advice about training and specific information about the training that OSHA offers, write or call: The OSHA Training Institute, 1555 Times Drive, DesPlaines, Illinois, 60018, 708/297-4913.

Cost for private-sector course participants is minimal and is based on the number of days of training.

WRITTEN INSPECTION REPORTS

In all but the smallest and least dangerous of workplaces, written inspection reports are necessary to record the hazards discovered, responsibility assigned for correction and tracking of correction to completion. Having a written record will help ensure:

- Assignment of responsibility for hazard correction,
- Tracking of correction to completion,
- Identification of problems in the controls system when the same type of hazards keep appearing even after correction is verified,
- Identification of problems in the accountability system and
- Identification of hazards for which no prevention or control has been planned.

Of course, having such written records will be most helpful if they are read by someone knowledgeable in the safety and health program. This person then can provide top managers with summaries of problems.

TRACKING CORRECTIONS OF HAZARDS

Tracking of hazard correction is covered in more detail in Chapter 8. What we wish to emphasize here is that the success or failure of inspections will be determined by the quality of follow-up. If correction cannot be accomplished immediately after the discovery of a hazard, the inspection report should include whatever interim protective measures have been taken and should not be considered closed until the final correction has been made. A written tracking system will improve your inspection program. The best tracking system is written right into your inspection report form. For examples of integrating correction tracking into hazard report forms, see Appendix 9-3.

Important things to remember about regular site inspections and follow-up:

- These inspections should cover every part of the worksite;
- They should be done at regular intervals, with frequency depending upon the size of the worksite and the nature of the hazards;
- In-house inspectors should be trained to recognize hazards and to bring fresh vision to work areas being examined;
- Found hazards must be tracked to correction; and
- Information from inspections should be used to expand the inventory of hazards and/or improve the hazard prevention and control program.

EMPLOYEE REPORTS OF HAZARDS

Employees play a key role in helping you discover and control the hazards that may develop -- or that already exist -- in your workplace. They have a unique and valuable perspective on procedures and conditions.

A reliable system for employee reporting is an important element of an effective safety and health program. Such a system is characterized by:

- A genuine company or worksite policy that is consistent with other policies and that encourages employees to report their concerns about safety and health conditions or possible hazards in work practices,
- Timely and appropriate responses to the reporting employee,
- Timely and appropriate action where valid concern exists,
- Tracking of any required hazard correction and
- Protection of reporting employees from official and unofficial harassment.

COMPANY POLICY

You have decided what your policy will be concerning employee reporting. The next step is to ensure that all employees understand the policy. Further, they need to be made aware that the policy is genuine. In larger worksites the policy should be typed and placed on bulletin boards, distributed to all employees and discussed in weekly or monthly safety meetings. In the smallest worksites it may be sufficient to gather every one together, go over the policy and then invite discussion or questions. You will know that you have done enough when every employee, when asked, can tell you what the policy is.

The written policy is a good place to affirm your attention to protect employees from harassment or reprisal or any kind. See the discussion below and the policy example in Appendix 9-2.

TIMELY AND APPROPRIATE RESPONSE AND ACTION

Having employees report hazards will not work if they cannot see reasonable results in a reasonable amount of time. You can give your employee a preliminary response when extra time is needed to analyze a reported hazard. Many larger workplaces assign special maintenance codes to work orders that involve safety or health. The code requires the maintenance supervisor to g ive that work a higher priority. When complete correction of a hazard requires ordering parts or materials and a wait of several months, give your employee a status update from time to time. You will be sending a message that the concern has not been forgotten.

Important: When the preferred corrective measures cannot be accomplished immediately it is your responsibility to provide interim protection to your workers. You must take whatever steps may be feasible to temporarily eliminate or control the hazards.

Results must not only be timely but must also alleviate the employee's concern. If management decides that no hazard exists the reason behind that judgment should be thoroughly explained to the reporting employee. Care should be taken to express gratitude for the employee's erring on the side of safety and health. It is better to have some non-hazards reported than to overlook even one real hazard because a worker believed that management would not respond.

If you are uncertain whether the reported practice or condition is hazardous, further checking needs to be done. If a good description can be given over the phone, or photographs or drawings made that reveal the situation, you can contact the OSHA funded, state-run consultation service. If your employee has discovered a real hazard the action that you take to correct it should be appropriate and swift.

TRACKING HAZARD CORRECTIONS

Each valid hazard identified through employee reports of hazards should be tracked to complete correction. Hazards that are quickly corrected may not present a problem for long-term tracking, but a record of the correction will help in determining where management systems have broken down should the same hazard reappear. Different management measures may be needed for hazards that do not stay corrected, as contrasted with those that do not get corrected. For hazards that require complicated or time-consuming corrections, a system of tracking is needed to make sure that the final correction is not forgotten in the press of other matters. Additionally, tracking long-term hazard correction enables management to keep the reporting employee better informed.

PROTECTION FROM HARASSMENT

It is important that employees know that reporting a hazard will not result in any official or unofficial harassment or reprisal from management, individual supervisors or co-workers. The policy on employee reporting hazards should make this clear. In addition, there are several steps you can take to help ensure that harassment is never considered:

- Avoid performance evaluations that rate supervisors negatively for submitting reports of hazards by employees in their areas as long as they are responding appropriately to the reports.
- Separate employee reports of hazards from the disciplinary system. For example, avoid placing policy statements dealing with these two subjects close together on a bulletin board or in sequence in an employee handbook. Such physical proximity can give the impression that one employee can get another in trouble by reporting him or her for hazardous practices.
- Approach all discussion and written descriptions of employee reporting of hazards as a group effort to keep the worksite safe and healthful. Emphasize the positive.
- Emphasize the responsibility that employees have for co-workers' safety and health as well as for their own. The safety and health of individual employees is everyone's business.
- If you discover a case of harassment for reporting a hazard, enforce your policy clearly and emphatically.

REPORTING SYSTEMS

There are several ways that employees can report hazards. The most common are verbal reports to supervisors, suggestion programs, a hazard card program, maintenance work orders and written forms that provide for anonymity. Many larger worksites will use a combination of some or all of these systems.

Verbal Reports. At every worksite employees should be able to report hazards to their supervisors. When the supervisor is properly trained and accepts responsibility for the safety and health of the workers under supervision, informal oral reporting can occur naturally. When an employee's concerns appear valid the supervisor has the responsibility to either correct the hazard, request correction by maintenance or ask for assistance from the safety department.

Most worksites encourage this type of reporting. Used alone, however, it does not provide for hazard correction tracking. Nor does it enable you to look for trends and patterns. And it provides little protection from supervisors who may not be sufficiently concerned about health and safety.

At very small worksites, where "everybody knows everything," this verbal system may be all that is needed. We recommend, however, that you at least adopt a simple written system where the supervisor makes a short report of each hazard reported and the action taken. See Appendix 9-3 for suggested reporting forms.

Suggestion Programs. The most frequently used type of written system is a program where employees are encouraged to make safety and health suggestions. This is a very positive approach. Not only does it provide for reporting unsafe conditions and acts but it also encourages employees to come up with imaginative new ways of doing things safely and healthfully. If a suggestion program is used for hazard reporting, however, management must be sure that collection points are checked several times a day and that suggestions are read at the time of collection. This will ensure that identified hazards get corrected in a timely manner.

If the suggestion program is the sole means of reporting hazards or the only written system, management must encourage employees to use the system for all types of hazards reporting and not just for ideas in the " would be nicer if" category.

A hazard card p rogram. Many medium and large worksites develop or purchase a program for employee hazard reporting. One such program includes a format for training employees in basic hazard recognition. It uses cards on which employees jot down unsafe conditions and p ractices. These cards usually are turned in to the safety department for checking and tracking of any valid hazard correction.

Some workplaces give awards for the highest number of cards with valid concerns turned in over a specific period of time. Othe rs have set quotas for number of cards turned in. The success of these special uses seems to depend upon the "cultural" of the worksite.

Maintenance work orders. Maintenance usually will have to be called to make the correction of unsafe conditions. Some companies give every employee the right to fill out a maintenance work order. Others allow employees to fill them out but require supervisory sign-off before orders are sent to the maintenance department.

This system for employee hazard reporting should be used only if there is a special high priority safety and health code for maintenance work orders. With such a code the maintenance supervisor is required to give hazard correction work orders higher priority than maintenance for production improvement only. Copies of coded work orders should be carried immediately to the Safety Department (or person responsible for safety and/or health) so that corrections tracking can begin.

This special code also helps your safety and health staff look for patterns that may become apparent over time and that call for closer scrutiny of conditions or practices.

The work order system for employee reporting of hazards is not sufficient if used alone. While it can lead to correction of hazardous conditions, it cannot correct hazardous practices. And this system is not useful for encouraging imaginative new approaches to improving conditions and procedures.

Written Forms. Some of the systems described above involve the use of forms. The best written system for your worksite may be one that you devise especially for employee reports of hazards. You can allow for anonymity, when desired, by not requiring the reporting employee to either sign the form or give the completed form to the supervisor. You can post your response to an anonymous report on a bulletin board in the area mentioned in the report. For worksheets useful in developing this form, see Appendix 9-3. You can use Example #1 as a two-part form, or you can use just the bottom half as the supervisor's form to document verbal reports of hazards.

For all the reporting systems discussed above, some variations will work better for your site than others. The important points to remember are:

- Have a policy that encourages employee reports of hazards,
- Make this policy well known and understood,
- Protect reporting employees from harassment,
- Respond in an appropriate and timely manner,
- Track all hazards to correction and
- Use the information you obtain about hazards to revise your hazard inventory and/or to improve your hazard prevention program.

ACCIDENT/INCIDENT INVESTIGATION

Much has been written about investigating accidents and many elaborate charts have been devised to assist the investigator. In this chapter we will not attempt to duplicate all the information readily available elsewhere. A good, comprehensive publication available from the National Safety Council is "Accident Investigation . . . A New Approach," published in 1983.

Accident/incident investigation is another tool for uncovering hazards that either were missed earlier or have managed to slip out of the controls planned for them. It is useful only when done with the aim of discovering every contributing factor to the accident/incident in order to "foolproof" the condition and/or activity and prevent future occurrences. In other words, your objective is to identify root causes.

Definitions. The National Safety Council defines "accident" as "an unplanned, undesired event that results in personal injury or property damage." It defines "incident" as "an unplanned, undesired event that adversely affects completion of a task." An illness that results from a single occurrence comes within the term "personal injury." This term does not refer to occupational illness resulting from long-term exposure to health hazards.

What Should Be Investigated? Since all accidents result in property damage or personal injury, they should be investigated to determine the contributing causes and actions needed to prevent future occurrences. Since incidents could result in property damage or personal injury, these also should be investigated. "Near misses" fall into this latter category. This term describes incidents where no property was damaged and no personal injury sustained, but where given a slight shift in time or position, damage and/or injury easily could have occurred.

Who Should Investigate? The usual investigator for all incidents is the supervisor in charge of the involved area and/or activity. At a minimum, the safety department or the person in charge of safety and health should review these investigations and provide for another level of investigation when:

- The incident had very serious results,
- The nature of the incident is very complex,
- The incident involved more than one supervisor's responsibilities and/or
- The initial investigation did not clearly establish a full range of contributing factors and/or preventive actions.

Many companies use a team or a subcommittee of the joint employee-management committee to investigate incidents involving serious injury or extensive property damage. This may supplant the supervisor's investigation or may serve as a second-level investigation. When a team or committee investigates, the team leader or chairperson must have enough authority and status in the organization to do whatever is needed.

Training for Incident Investigation. No one should investigate incidents without appropriate accident investigation training. Many safety and health consultants and professional organizations provide this type of training. Before you commit resources to training, you might want to check the course contents against the information found in the National Safety Council's pamphlet, "Accident Investigation . . . A New Approach." After your investigators have received training, you should follow up by checking investigative reports to see if the training is being put to good use.

Results Desired. The investigation report, regardless of length or style of presentation, should document the full range of facts. The report should include thorough interviews of everyone with any knowledge of the incident. Six key questions should be answered: WHO, WHAT, WHEN, WHERE, WHY and HOW. Fact should be distinguished from opinion and both should be presented carefully and clearly. A good investigation is likely to reveal several contributing factors and it probably will recommend several preventive actions.
You will want to avoid the trap of laying sole blame on the injured employee. Even if the injured worker accepts blame for making a mistake or not following prescribed procedures the accident investigator must not be satisfied that all contributing causes have been identified. The error made by the employee may not be even the most important contributing cause. The employee who has not followed prescribed procedures may have been encouraged directly or indirectly by a supervisor to "cut corners." The prescribed procedures may not be practical, or even safe, in the eyes of the employee. When engineering redesign might be a better answer elaborate and difficult procedures sometimes are required. In such cases, management errors -- not employee error -- may be the most important contributing causes.

All supervisors and others who investigate incidents should be held accountable for describing causes carefully and clearly. When reviewing accident investigation reports, the safety department or in-house safety expert should be on the lookout for catch-phrases, for example, "Employee did not plan job properly." While such a statement may suggest an underlying problem with this worker, it is not conducive to identifying all possible causes, preventions and controls. Certainly, it is too late to plan a job when the employee is about to do it. Further, it is unlikely that safe work will always result when each employee is expected to plan procedures alone.

Recommended preventive actions should make it very difficult, if not impossible, for the incident to recur. The investigative report should list all the ways to "foolproof" the condition or activity. Considerations of cost or engineering should not enter at this stage. Top management should have the benefit of the investigator's complete thinking before making decisions about prevention. Some recommended actions will be accomplished immediately. Others may take time, planning and capital expenditure.

Use of Accident Investigations. The primary purpose of accident investigations is to prevent future occurrences. Beyond this immediate use, the information obtained through the investigation should be used to update and revise the inventory of hazards and/or the program for hazard prevention and control.

ANALYSIS OF PATTERNS

OSHA's Safety and Health Program Management Guidelines list the analysis of "injury and illness trends over time so that patterns with common causes can be identified and prevented," as the last action under Worksite Analysis. A review of OSHA illness and injury logs is the most common form of pattern analysis. These logs are not, however, the only useful source of such information. Any records of hazards can be analyzed for patterns. Examples are inspection records and employee hazard report records.

Pattern Analysis of the OSHA Log of Injury and Illness

Period of time covered. A record being analyzed for patterns must contain enough entries to allow patterns to emerge. A worksite with few employees or very little hazardous work may require a review of 3 to 5 years of records. Because a site is small or does little hazardous work does not mean, however, that pattern analysis is useless. Even if an office operation has only one or two injuries each year, a 5-year review may indicate uncontrolled cumulative trauma hazards or lack of attention to tripping hazards. Larger sites will find useful information in yearly, quarterly or monthly reviews.

What to look for. Similar injuries or illnesses indicate a hazard or type of hazard that has not been controlled yet. Diagnostic clues can be traced by noting where the injuries or illnesses occurred, what type of work was being done, the time of day, any similarities or equipment, etc. Injuries need not be identical. They can be, for example, to the same part of the body. Obviously, repetitions of the same type of injury or illness indicate that hazard controls are not working adequately.

Any clues that suggest a previously unnoticed connection between several injuries of illnesses is worth further investigation.

Pattern Analysis of Inspection Records and Employee Hazard Reports. Hazard identification should be occurring more frequently than incidents/accidents. It should be possible, therefore, to uncover patterns in hazard identification records over shorter periods of time than may be needed to analyze patterns in incidents. Repeat hazards, just like repeat injuries, mean that controls are not working. Upgrading a control may be as simple as improving accountability. (Of course, what is simple is not always easy.)

The causes of hazards can be investigated using techniques similar to those developed to find the causes of accidents. The three flow charts in Appendix 9-4 contain the questions to ask and the paths to trace in searching for the causes of hazards.

SUMMARY

Even after you conducted comprehensive hazard surveys, analyzed each workplace change for hazards, routinely analyzed jobs and/or processes for hazards and developed a program of hazard prevention and control there still will be some hazards in your worksite. These hazards may have been missed, or measures taken may not have been adequate to maintain prevention or control over time.

This chapter has examined additional techniques for learning more about these persistent hazards, their correction and effective and continuing control. Regular site inspections; employee reports of hazards; accident/incident investigations; and analyses of patterns of illness and injury, incidents and hazards will help complete your safety and health program.

APPENDIX 9-1

SUGGESTED INSPECTION INVENTORY

FOR USE IN DEVELOPING

INSPECTION GUIDELINES OR CHECKLISTS [1]

1. Environmental factors (such as illumination, dusts, gases, sprays, vapors, fumes, noise, air temperature);

2. Hazardous supplies and materials (such as explosives, flammables, acids, caustics, toxic materials or by-products);

3. Production and related equipment (such as mills, shapers, presses, borers, lathes, grinders, saws);

4. Power source equipment (such as steam and gas engines, electrical motors);

5. Electrical equipment (such as switches, fuses, breakers, outlets, cables, extension and fixture cords, ground connectors, connections);

6. Hand tools (such as wrenches, screwdrivers, hammers, chisels, files, power tools);

7. Personal protective equipment (such as hard hats, safety glasses, safety shoes, respirators);

8. Personal service and first aid facilities (such as drinking fountains, wash basins, soap dispensers, safety showers, eyewash fountains, first aid supplies, stretchers);

9. Fire protection and extinguishing equipment (such as alarms, water tanks, sprinklers, standpipes, extinguishers, hydrants, hoses);

10. Walkways and roadways (such as ramps, docks, sidewalks, aisles, vehicle ways);

11. Elevators, escalators and manlifts;

12. Working surfaces (such as ladders, scaffolds, catwalks, platforms, sling chairs, desk heights);

13. Materials handling equipment (such as cranes, dollies, conveyors, hoists, forklifts, chains, ropes, slings);

14. Transportation equipment (such as bicycles, automobiles, railroad cars, trucks, front-end loaders, helicopters, motorized carts and buggies);

15. Warning and signaling devices (such as sirens, crossing and blinker lights, klaxons, warning signs);

16. Containers (such as scrap bins, disposal receptacles, carboys, barrels, drums, gas cylinders, solvent cans);

17. Storage facilities and areas, both indoor and outdoor (such as bins, racks, lockers, cabinets, shelves, tanks, closets);

18. Structural openings (such as windows, doors, stairways, sumps, shafts, pits, floor openings);

19. Buildings and structures (such as floors, roofs, walls, fencing); and

20. Miscellaneous.

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[1]Source: National Safety Council

APPENDIX 9-2

SAMPLE POLICY FOR EMPLOYEE REPORTING OF HAZARDS

Every employee is expected to watch for and to report any possible hazards to employee safety and health. You may make your reports by speaking to your supervisor or by submitting a written report through the _____ (use your company's name for the written hazard reporting system). Make your report immediately or as soon as possible.

No employee, at any level, shall discipline or harass any other employee because of reports made of hazards. Any employee found to have discriminated against another employee for this reason shall be disciplined.

Remember, YOU are needed to help keep this worksite safe and healthful!

_____

(Signature of top manager at worksite)

APPENDIX 9-3

SUGGESTED FORMS FOR EMPLOYEE REPORTING OF HAZARDS

EXAMPLE #1 - EMPLOYEE REPORT OF HAZARD

EMPLOYEE REPORT OF HAZARD

Hazard or problem _____
_____
_____

Suggested action _____
_____
_____

Department :_____
Date: _____
Hour: _____

EMPLOYEE: COMPLETE THE ABOVE AND GIVE TO SUPERVISOR

Action taken: _____
_____
_____

Department: _____
Date: _____
Supervisor's Signature _____

SUPERVISOR: COMPLETE AND GIVE TO MANAGER

Review/Comments _____
_____
_____

Manager's Signature _____ **Date** _____

FOLLOW-UP DOCUMENTATION

(Can be used as part of the preceding form or separately in companies whose employees are not required to put in writing the report of hazard.)

Hazard _____
_____
_____

Possible injury or illness _____
_____
_____

Exposure _____ **Frequency** _____

Duration _____

Interim protection provided _____
_____
_____

Corrective action taken _____
_____
_____

Follow-up check made on _____. **Any additional action taken?**
_____
_____

Signature of Manager or Supervisor _____
Date _____

****

Three month follow-up check made on _____.

Is corrective action still in place? _____ _____
YES **NO**

EXAMPLE #2 - REPORT OF SAFETY OR HEALTH PROBLEMS

REPORT OF SAFETY OR HEALTH PROBLEMS

DESCRIPTION OF PROBLEM (INCLUDE EXACT LOCATION, IF POSSIBLE)

_____
_____
_____
_____
_____

NOTE ANY PREVIOUS ATTEMPT TO NOTIFY MANAGEMENT OF THIS PROBLEM AND THE PERSON NOTIFIED

_____
_____
_____

DATE: _____ OPTIONAL: SUBMITTED BY _____

SAFETY DEPARTMENT FINDINGS

_____
_____
_____
_____

ACTIONS TAKEN

_____
_____
_____

SAFETY COMMITTEE REVIEW COMMENTS

_____
_____
_____
_____
_____

ALL ACTIONS COMPLETED BY _____

EXAMPLE #3 - EMPLOYEE REPORT OF HAZARD

I believe that a condition or practice at the following location is a job safety or health hazard.

Is there an immediate threat of death or serious physical harm? Yes No

Provide information that will help locate the hazard, such as building or area of building or the supervisor's name. _____

Describe briefly the hazard you believe exists and the approximate number of employees exposed to it.

_____
_____
_____

If this hazard has been called to anyone's attention, as far as you know, please provide the name of the person or committee notified and the approximate date.

_____
_____

Signature (Optional) _____ Date _____

****

Management evaluation of reported hazard

_____
_____
_____

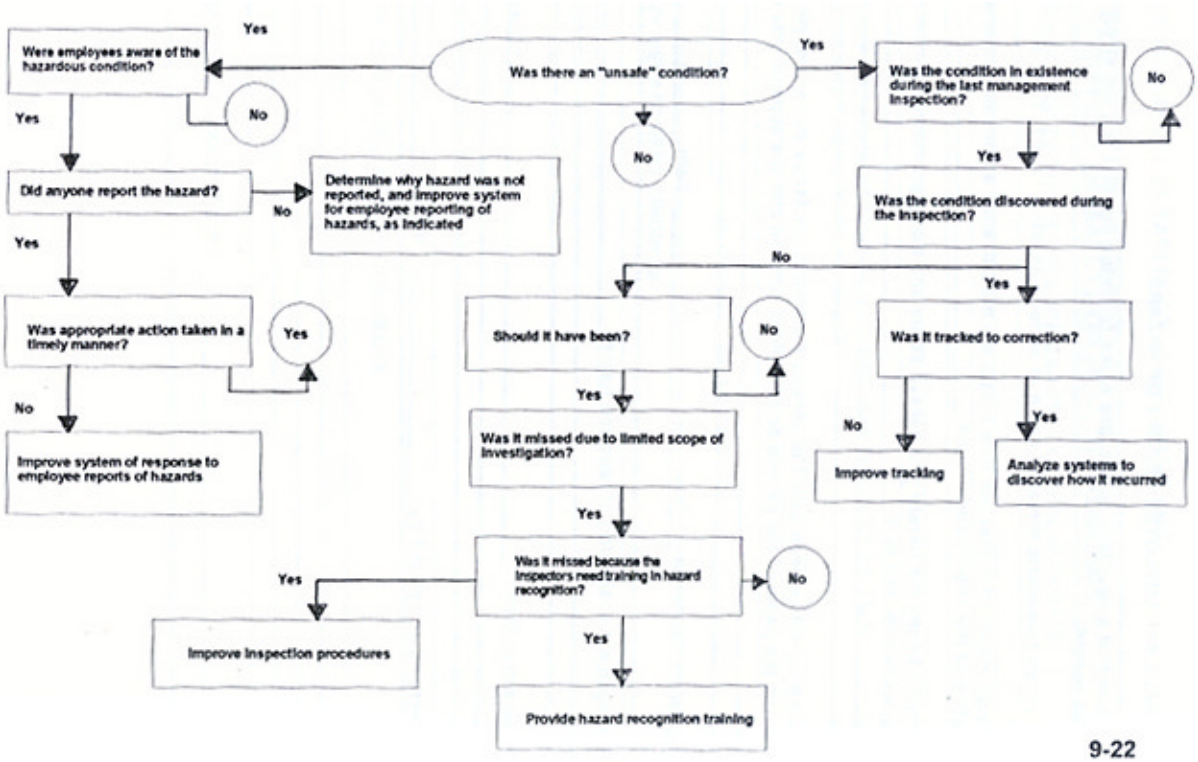
Final action taken

_____
_____
_____

All actions completed by _____ Initials _____

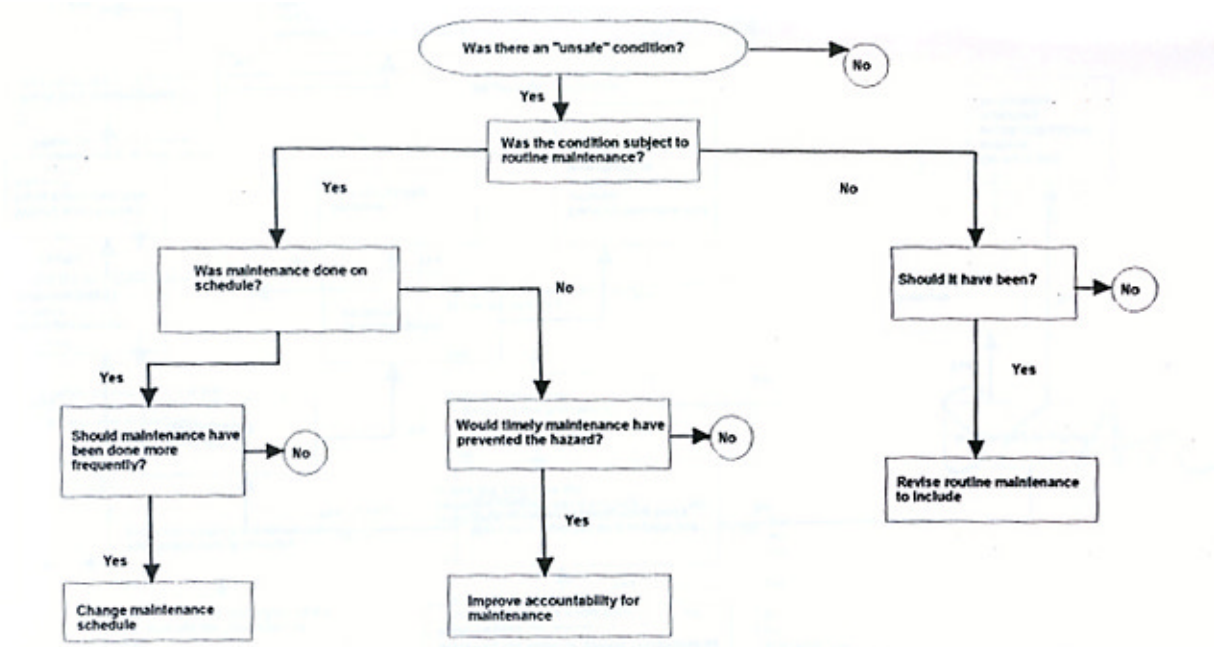
APPENDIX 9-4

HAZARD ANALYSIS FLOW CHARTS



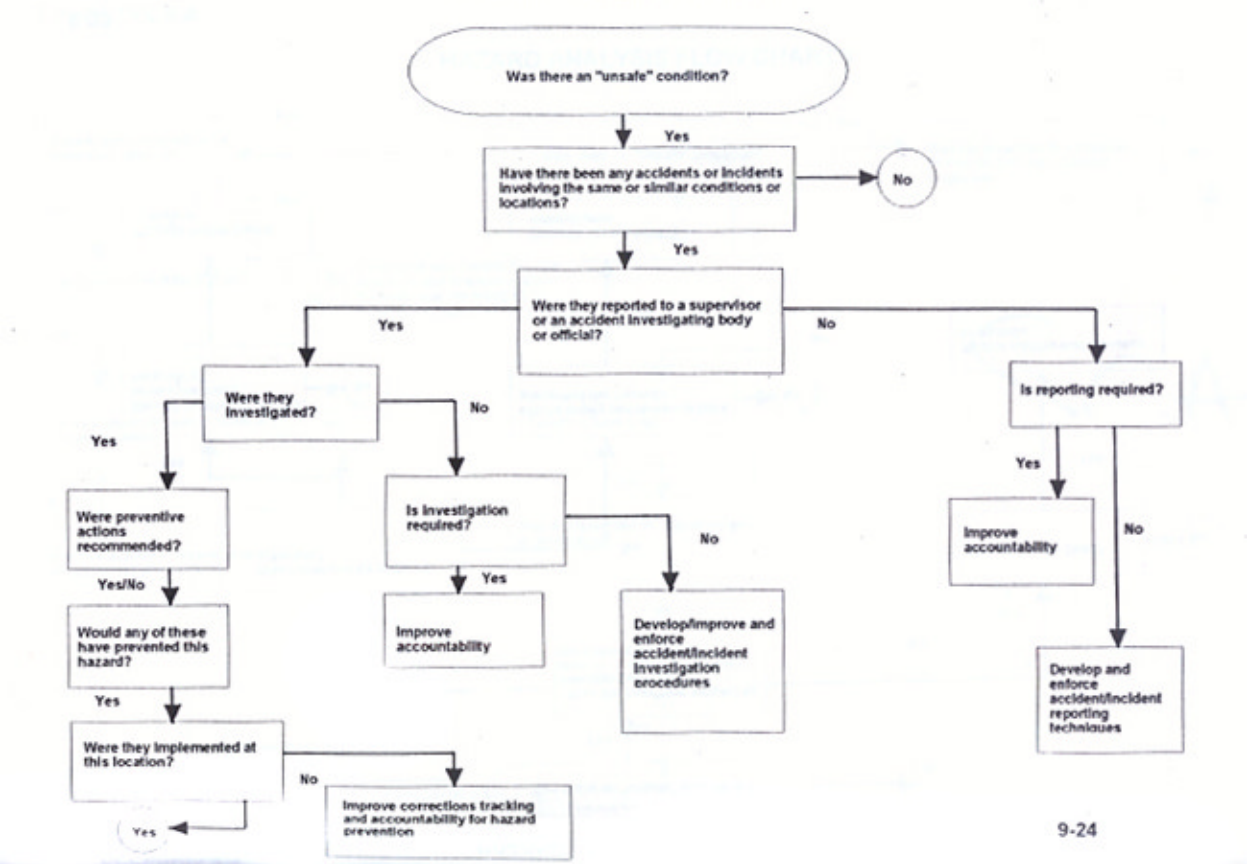
APPENDIX 9-4

HAZARD ANALYSIS FLOW CHARTS



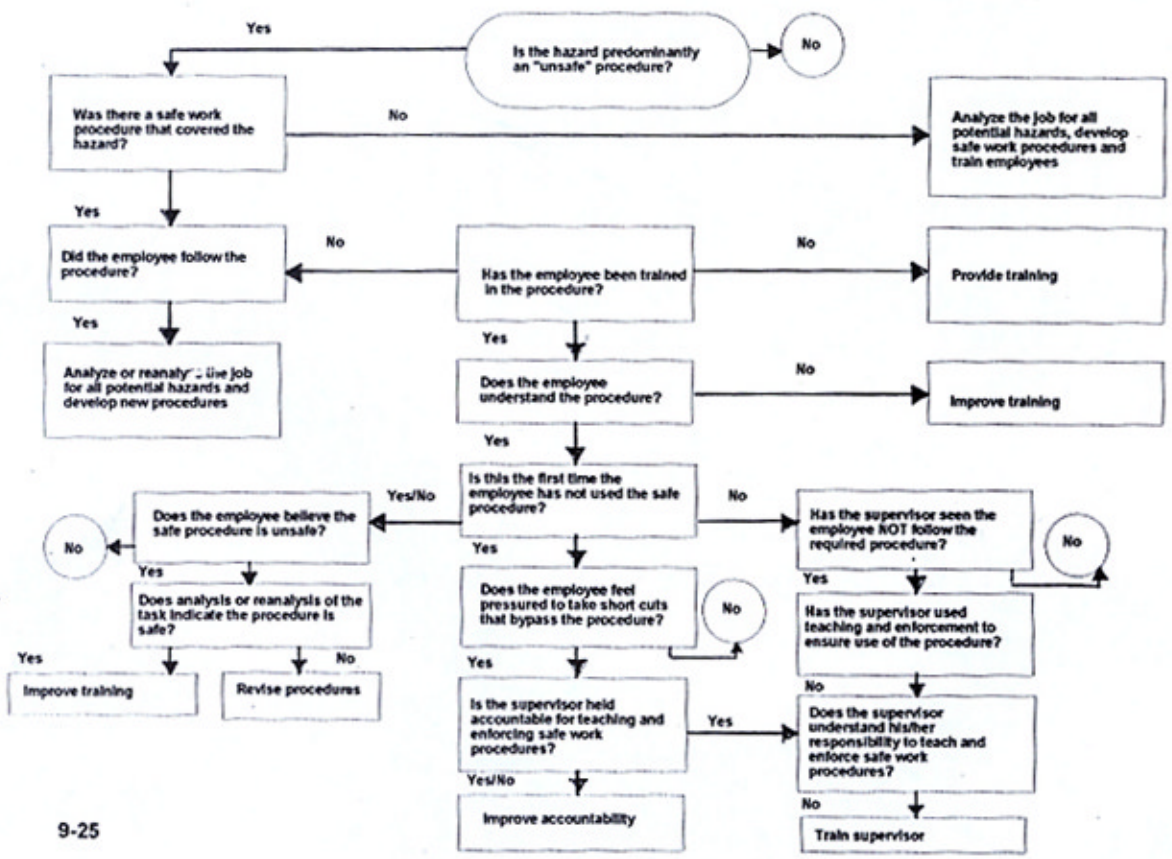
APPENDIX 9-4

HAZARD ANALYSIS FLOW CHARTS



APPENDIX 9-4

HAZARD ANALYSIS FLOW CHARTS



10.

CHAPTER 10

ESTABLISHING THE RIGHT MEDICAL PROGRAM FOR YOUR WORKSITE:

THE OCCUPATIONAL HEALTH DELIVERY SYSTEM

INTRODUCTION

Are you remembering the "health" in your occupational safety and health program? The Occupational Safety and Health Act of 1970 aims "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions . . ." Toward this end, OSHA's Safety and Health Program Management Guidelines strongly urge the identification and control of health hazards and the implementation of a medical program.

A medical program is another name for the systems that employers put in place to ensure occupational health expertise within the overall safety and health program. Having a medical program does not necessarily mean that you must go out and hire a doctor to work at your company. There are many ways for you to find and use occupational health expertise. This chapter will help you decide what will work best for your business.

We call the medical program the occupational health delivery system, or OHDS. This term will help you remember that a comprehensive program is more than an after-the-fact response to work-related injuries and illnesses. It also includes the activities that uncover the safety and health hazards in your business and that help you formulate a plan for prevention or control. It is a management system in the same way that the actions you take to promote safety are a management system.

You may find it more difficult to establish the goals and objectives for your OHDS than for the other parts of your safety and health program. The harm it prevents may not appear obvious at first. For example, an employee who is experiencing hand pain and who gradually is developing a cumulative trauma disorder (CTD) may seem to have a less serious problem than the employee who has a severe cut or broken bone from an accident. But our experience is that work-related health problems are no less serious in terms of loss and human suffering than the more obvious injuries.

An effective OHDS will help reduce all types of safety and health hazards and the resulting injuries and illnesses. The positive results from such a program will be measurable by a decrease in lost workdays and workers' compensation costs. You also can expect this program to help increase worker productivity and morale.

WHO SHOULD MANAGE THE OHDS?

You will find that the OHDS works best when managed by occupational health professionals (OHPs). A physician or a registered nurse with specialized training, experience and knowledge in occupational health which will work with you but not necessarily as your employee. This arrangement works best because safety professionals, industrial hygienists, occupational medicine physicians and occupational health nurses all have their own areas of specialized knowledge. You cannot expect to get all the information and service your safety and health program needs from only one type of specialist. If you tried, you might overlook or mis-identify a dangerous hazard in your business.

Appendix 10-3 contains a description of the different ways that physicians and registered nurses receive specialty training in occupational medicine and health and the different services that they can provide you. Chapter 12 contains information about some of the services you can get from safety professionals and industrial hygienists.

WHAT SERVICES DO YOU NEED FROM YOUR OHDS?

There is no such thing as a standard OHDS. There is no substitute for examining the special characteristics of your business and developing an OHDS that is right for you. These special characteristics include:

- The actual processes in which your employees are engaged;
- The type of materials handled by your employees;
- The type of facilities where your employees are working;
- The number of employees at each site under consideration;
- The characteristics of your work force, such as age, gender, ethnic group and educational level; and
- The location of each operation and its distance from health care facilities.

As you look at the characteristics of your employees and workplace, you should be asking yourself questions such as:

- Are there hazards in the process, materials or facilities that make it likely that employees will get sick, hurt or will suffer abnormal health effects from their work?

- **Are there so few employees that onsite occupational health resources are less practical than off-site contract services? Are there so many employees that time and money will be saved by installing onsite resources?**
- **Are there special characteristics of the workers that make them more vulnerable to illness or injury or less likely to understand the safety and health hazards of the worksite?**

You should be aware that under the Americans with Disabilities Act (ADA) employers may require employees to submit to medical examination only when justified by business necessity. It is our judgment that a health and safety concern qualifies as a business necessity. The results of any medical examination are subject to certain disclosure and record retention requirements (see Part 1910.120 of Title 29 of the Code of Federal Regulations), but also are subject to confidentiality requirements of the ADA. The ADA's employment-related provisions are enforced primarily by the U.S. Equal Employment Opportunity Commission.

- **Is there anything about the workplace that makes it important to have occupational health assistance closer or more rapidly obtainable?**

Answering these questions will put you in a better position to decide which OHDS services you need. The services are listed below. Appendix 10-1 includes some examples of how different companies of varied sizes tailor their OHDS activities.

THE RANGE OF OHDS FUNCTIONS

There are three basic types of OHDS activities:

1. **Prevention of hazards that cause illnesses and injuries,**

2. **Early recognition and treatment of work-related illness and injury, and**

3. **Limiting the severity of work-related illnesses and injury.**

Preventing Hazards

- **Make sure that your safety and health policy shows that you are as concerned about your employees' health as their safety. (See Chapter 2.)**

- **Make sure that qualified OHPs help you identify the hazards and potential hazards of your workplace. (See Chapter 7.)**

Use OHPs in the development and presentation of health training and other preventive activities, including the various measures required by OSHA's Bloodborne Pathogens standard. (See Chapter 11 and OSHA Publication 2254, "Training Requirements in OSHA Standards and Training Guidelines").

Remember that it is your responsibility to determine if you have employees who fall within the scope of the Bloodborne Pathogens standard and to make arrangements for compliance for these employees. Staff nurses, physicians and emergency response personnel are covered by the standard, even where no other employees appear at risk of occupational exposure to infectious diseases. (For more information on this standard, see OSHA Publication 3127, "Occupational Exposure to Bloodborne Pathogens.")

- **Provide professional occupational health expertise as a resource to your safety and health committee. (See Chapter 4.)**
- **Be sure to include your OHDS in your annual self-evaluation. (See Chapter 12.)**

Early Recognition and Treatment

- **Use OHPs to help you decide, on the basis of existing or potential hazards at your workplace, when you may need to conduct baseline and periodic testing of your employees and new hires for evidence of exposure. This is called "health surveillance" and is required by some OSHA standards for specific types of exposures.**
- **Use OHPs to do the testing needed for health surveillance.**
- **Make sure records are kept of employee visits to first aid stations, nurse's office, contract clinic or hospital. Have an OHP review the symptoms reported and the diagnoses to see if there appear to be patterns that indicate an occupational health problem.**
- **Provide first aid and CPR assistance through properly trained employees on every shift. Make sure that these employees keep up their certifications and that they receive adequate training in the hazards specific to the worksite. The Occupational Exposure to Bloodborne Pathogens standard (Part 1910.1030) outlines specific training requirements for employees expected to render first aid at work. It is essential that employees understand the hazards from bloodborne communicable diseases and how to protect themselves.**

- **Make sure that the OHPs whom you use have current credentials, have had recent occupational health continuing education, and understand the hazards of your worksite. These standards will help ensure their ability to recognize early symptoms of occupational health problems and begin prompt and appropriate treatment to prevent disability.**
- **Make sure that standardized procedures -- called "protocols" in the medical community -- are used throughout your occupational health delivery system, particularly if you are using more than one contractor for health services. (For more information, see Appendix 10-5).**
- **Have one of the OHPs keep your employee injury and illness records, whenever feasible. Make sure your recordkeeping system effectively ensures the confidentiality of individual employee medical records.**

Limiting Severity

- **Coordinate the emergency response of all responsible individuals or departments at your worksite and of all emergency organizations off the worksite, such as the fire department, any contractual organization or a nearby community hospital. Everyone needs to know exactly what to do and what to expect from others. (See Chapter 8 and OSHA Publication 3088 (revised 1991), "How to Prepare for Workplace Emergencies.")**
- **Maintain contact through your OHP (whether you are an employee or provided by contract) with any employee who is off work due to an occupational illness or injury.**
- **Keep in touch with the practitioner providing treatment and care to ensure that the treatment is appropriate and that the employee is responding as expected.**
- **Use your registered nurse or physician to help advise an employee who is off work for an extended period about workers' compensation rights and benefits and ongoing care.**

- **Use these OHPs to provide evaluation aimed at determining whether an employee can resume full duty after injury or illness or whether work duties need to be modified.**
- **Consult your physician or registered nurse for help with the development of a modified duty position to ensure that the employee can perform the work and benefit from feeling productive again**
- **Develop and deliver health care in accordance with Federal and state regulations, for example, OSHA standards, workers' compensation laws and public health regulations.**

SUMMARY

Your business' medical program, what we call its occupational health delivery system, is an important part of your safety and health program. It can deliver service aimed at preventing hazards that can cause illness and injury, rapidly recognizing and treating illness and injury, and limiting their severity.

To determine which of these services are appropriate, you need to consider your business' special characteristics. These include the type of processes and materials your employees work with and the resulting or potential hazards. Other things to consider are the type of facilities in which employees work, the number of workers at each site and the characteristics of this work force such as age, gender, cultural background and educational level. The location of each operation and its nearness to a health care facility also are important.

Whether you hire or contract with an occupational health professional, make sure this person has specialized training, experience and up-to-date credentials. Then use that professional to help you develop and deliver the services you have chosen.

APPENDIX 10-1

EXAMPLES OF OCCUPATIONAL HEALTH DELIVERY SYSTEMS

Here are three examples of OHDSs at large, medium and small workplaces. The first is a manufacturing firm with about 1,800 employees divided between two locations. The second is a meatpacking company employing about 500. The last example is a small, independent janitorial service with 35 employees. These examples show that each company's service needs are individual and that their methods for providing the services are best provided by people whom you hire as your own employees; in other situations, it may be better to contract for these services. In our examples, notice that sometimes employers use community agencies to supply services. Using community agencies may save you money.

BACKGROUND INFORMATION ON THE SAMPLE COMPANIES

Company One. **One thousand of the workers employed by the larger manufacturing company are at one site, where the components of their major product are manufactured. A second site, five miles away, has 500 employees and includes a line where the components are assembled. Also in that building are the facility's maintenance department and a garage where the company trucks other vehicles are parked and serviced. At that same site, but in a different building, are the executive offices that house all the administrative divisions, such as accounting, human resources, marketing and a small showroom.**

The manufacturing site is 17 miles from the nearest medical facility. The light assembly and administrative site is 12 miles from the nearest medical facility. The company runs two shifts, each eight hours. These are a day shift and an evening shift. There are two security personnel working alone from midnight to 7 a.m.

Company One employs a safety professional to head its safety department and an occupational health nurse practitioner to head its OHDS. Both departments have other professional and non-professional staff to support the department heads. The safety department and OHDS both have offices at the manufacturing site.

Company Two. **Company Two, the meatpacking company that employs 500 workers, has 460 people working in the slaughter department and the department where carcasses are dismantled. These divisions operate on a day shift of 10 hours. In addition, there are 20 people who perform plant sanitation and maintenance functions on an overlapping evening shift. There also are 20 employees in supervisory positions and in administrative positions such as personnel, payroll, and safety and health.**

The plant is seven miles from the nearest health care facility. The company employs a full-time occupational health nurse (registered nurse) and a full-time safety director.

Company Three. **Company Three, the small, independent janitorial agency, provides cleaning and light maintenance services for commercial buildings. There are 35 employees: the owner-manager, three clerical support personnel, an evening supervisor, and 30 service personnel - 20 men and 10 women. The service personnel report to a central office from which they are dispatched in teams of two or three in company vans. The service personnel all work on evening shift from 5 p.m. to 1:30 a.m. Two of the clerical employees work a day shift, 9 a.m. to 5:30 p.m. One clerical employee works a shift that spans the day and evening shifts. The supervisor works the same evening shift as the service personnel.**

No safety, industrial hygiene or occupational health professionals are employed by this company.

In the sections below you will find major portions of an OHDS and descriptions of our three sample workplaces' handling of these tasks.

HAZARD ANALYSIS

Company One. The basic work of providing a comprehensive assessment of hazards (see Chapter 7) was done by a committee composed of the safety director of manufacturing, the supervisor of maintenance and two line employees, one from day shift and one from evening shift. In addition, a consultation was requested from the liability insurance company's loss control division. The consultation was conducted by an industrial hygienist who confirmed the need to monitor for noise in the manufacturing area. She also helped the occupational health nurse practitioner and the human resources director write job descriptions for the major employee classifications. The descriptions emphasized important safety and health considerations such as the amount of weight lifted and the chemicals handled.

A second consultation was obtained from the department of occupational medicine at the nearby university. The occupational medicine physician suggested a design for an optional health surveillance program for cumulative trauma disorders (CTDs) in the shoulders, arms and hands of the employees in light assembly. The program is designed to use personnel and other resources already available at the company.

Company Two. The meatpacking company's safety and health committee consisted of the safety director, the occupational health nurse, a supervisor and four hourly employees, one each from the slaughter, fabrication, sanitation and maintenance departments. This group's hazard assessment included basic safety and industrial hygiene evaluations as well as a complete ergonomic review following the "OSHA Ergonomic Program Management Guidelines For Meatpacking Plants." Their assessment included a check for potential exposures to communicable diseases from the slaughtered animals. The committee developed a list of questions about safety and health conditions and potential hazards in the plant. To answer these questions the committee performed a series of walk-throughs and employee interviews.

In addition, the safety director and the occupational health nurse analyzed the actual jobs being performed by line employees for potential ergonomic problems. OSHA's ergonomic guidelines helped them identify those positions that involve the specific activities associated with the development of CTDs. Furthermore, they reviewed all of the material safety data sheets (MSDSs) for all the chemicals used for cooling and sanitation at the plant.

Company Three. At company three the owner-manager of the janitorial service was aware, from reading the newspaper, that OSHA was enforcing protective measures for workers exposed to ergonomic hazards. She contacted the OSHA-funded, state-run consultation service and received information about the criteria that were being used for enforcement. This information guided her in organizing a management system that would meet the enforcement requirements. At the owner's request, consultation personnel examined this system and other aspects of the company's safety and health program, including the hazards to which employees were exposed. They helped develop protection against the hazards found and recommended a CTD training program with an emphasis on back injuries. They also recommended a driver safety program.

EMPLOYEE TRAINING

Company One. **The safety director and the occupational health nurse practitioner designed training programs to be delivered during employee orientation. The programs inform the employees about the company's safety and health policies and program and alert them to the specific hazards in their jobs and what they need to do to protect themselves. The training is conducted by safety department and OHDS staff members who have been prepared by taking special train-the-trainer courses. Employees are invited to contact the safety director, the occupational health nurse practitioner or their supervisors if they have further questions. The training includes a short test at the end to demonstrate that the employees understand their specific risks and how to protect themselves. There is a regular schedule for follow-up training.**

Because the plants of Company One are more than 10 minutes away from the nearest medical facility, the decision was made to establish emergency response teams in both locations and on both shifts. The teams are set up on a volunteer basis and consist of five employees per shift per location plus all the security personnel. The company contracts with the American Red Cross to provide training and refresher classes in first aid and cardiopulmonary resuscitation (CPR) at the workplace.

Because the emergency response team members in the course of their duties could be exposed to infectious diseases such as hepatitis B and AIDS, they are covered by OSHA's Bloodborne Pathogens standards. Consequently, in addition to the training required by the standards, they also have been offered the hepatitis B vaccine, personal protective equipment to protect them against exposure has been selected and distributed to them by the occupational health nurse practitioner.

Company Two. **Management decided to conduct the employee training program using their own company personnel. The safety director designed the training program to address hazards such as fire, walking surfaces, cuts, elevations and ammonia leaks. The occupational health nurse designed training that promotes hygienic practices to reduce the possibility of exposure to biologic hazards such as brucellosis, anthrax and Q fever associated with animal handling. In many respects the activities performed by the workers to protect the meat from contamination, as required by the U.S. Department of Agriculture, also protect them. Where this is not the case, the program is designed to emphasize what employees need to know and do to protect themselves. The nurse also developed material that informs the employees about the early signs and symptoms of CTDs and ways to help prevent them.**

The occupational health nurse and the safety director at the meat packing company together instruct the employees about the chemical and temperature hazards associated with the industry. Additional classes are held for the clerical, sanitation and maintenance workers. Supervisors also are trained to recognize the early symptoms of ergonomic problems so they can encourage workers to report these problems as readily as other injuries or illnesses.

Five volunteers from each plant area or unit and all the supervisors from each shift make up the company's emergency response team. A commitment of one year is expected of members of the team. These employees are covered by OSHA's Bloodborne Pathogens standards. They all were given first aid training that include instruction and practice in how to protect themselves from exposure to bloodborne pathogens such as the hepatitis B and AIDS viruses. Retraining occurs for all team members at the anniversary date, when new members are added.

Company Three. At company three the state OSHA consultation office suggested contracting with a nearby occupational health clinic, already providing work-related employee health services, to conduct training in the prevention of CTDs with an emphasis on back safety. In addition, the employees are informed about the contents of the cleaning solutions they are using along with proper mixing techniques and the use of gloves and protective eye glasses. The MSDSs, which list toxic ingredients, are explained, and employees are told where these documents are kept.

The initial class was provided at the janitorial service company's central office. Since then new employees are instructed at the clinic as part of their pre-placement physical examination and orientation. Finally, the owner received booklets promoting safe defensive driving and the use of seat belts from the Automotive Occupant Restraint Council. These booklets were distributed to all current employees and are included in the orientation materials for all new employees. The employer plans to develop and distribute to all employees a brief self-test based on the booklet.

The employer encourages the service personnel to take a beginning first aid course offered through a local municipal adult education program by granting paid time for the class. The evening supervisor was required to take the beginning and advanced first aid course. Each van is supplied with a first aid kit, as is the office. The service employees are instructed to report all injuries and illnesses to the supervisor at the end of their shift or sooner by phone if they think that the problem requires the employee to go to a nearby emergency room or contract occupational health clinic.

HEALTH SURVEILLANCE

Company One. **Machines in two departments were extremely noisy. The safety director designed, and the maintenance department constructed, double layered sheet rock walls with sound reducing baffles between them around the two machines. Then the company contracted with an industrial hygienist to perform an environmental sound survey. This survey showed that, even after construction of the sound baffles, the noise level in one of the departments was still too high. The company also contracted with a nearby audiologist to perform baseline pure tone hearing tests on all current employees. New employees for the department designated as too noisy are tested as part of their orientation. The required annual audiometric testing is done by this same audiologist. The occupational health nurse practitioner conducts the education program about hearing conservation. She also did the research necessary in order to purchase the best hearing protectors for the employees.**

Company Two. **They consulted with the occupational medicine physician to develop a CTD surveillance program. As one result, the physician made the portion of the pre-placement physical examination that dealt with the upper extremities and the back more detailed for the workers in the slaughter department and the division where carcasses are dismantled. At the six-month and one-year anniversary dates randomly selected employees are invited back to be reexamined. Examination results that indicate early development of CTD are reported to the employees, and management is informed about which positions need further evaluation. However, no personal information that identifies particular employees is released to management.**

Company Three. **Company Three had no need of health surveillance.**

ANALYSIS OF EMPLOYEE USE OF THE OHDS.

Company One. **A clerk in the OHDS office is assigned to enter information about each employee visit onto a spread sheet that includes the date, the time of day, the employee's department, the employee's complaint and the treatment rendered. Totals from the graph are examined by the occupational health nurse practitioner every month. Any unusual clusters of complaints are investigated by the safety committee.**

Company Two. **At company two the occupational health nurse maintains a spread sheet of all employee visits to the health office. She combines this information with that received from the contract occupational medicine physician to form a report that is presented to the safety and health committee each month. This report and the accident reports become the basis for special safety and health emphasis programs within the company.**

Company Three. **For company three the contract occupational health clinic sends a monthly statement to the employer that summarizes all bills that have been submitted to the company's workers' compensation insurance carrier. This summary includes both diagnostic and treatment information. The employer analyzes this information for trends in injuries and illnesses as one way of determining if employees are being exposed to identified hazards, if hazards exist that have not been identified or if employees need more training about hazards.**

ESTABLISHING STANDARD PROCEDURES

Company One. **The occupational health nurse wrote procedures for the "first aiders" to use when administering first aid, CPR and emergency transfer of ill or injured workers. She also wrote procedures that describe the standardized assessment and onsite treatment that she uses for employee illnesses or injuries and for all health surveillance programs.**

Company Two. **At company two the occupational health nurse and the contract occupational medicine physician worked together to write procedures for all the treatment given in the OHDS office, including the dispensing of over-the-counter medications. They also wrote procedures for hygienic practices for the employees exposed to biologic hazards. These procedures were intended to ensure that employees do not consume food, beverages and tobacco products with contaminated hands, and that they do not accidentally contaminate their street clothes or shoes before leaving the plant. The safety director and the occupational health nurse developed procedures for ensuring that the employees of contractors performing pest eradication operations do not accidentally expose employees to pesticides. Finally, this same team developed procedures that included proper work techniques and frequent knife sharpening to prevent ergonomic problems.**

Company Three. **For company three the state OSHA consultation staff worked with the owner to develop standardized procedures for first aid and emergency situations. They also wrote specific procedures for mixing and using all the cleaning solutions using the buddy system for lifting heavy objects and rotating tasks involving lengthy repetitive motions such as vacuuming. Discussion of the procedures is included in the new employee orientation.**

EARLY RECOGNITION AND TREATMENT

Company One. **The occupational health nurse practitioner who heads this department has graduate level training in assessment and management of occupational illnesses and injuries. She is licensed to treat many of the employees' occupational injuries and illnesses using previously approved standard procedures. A referral relationship has been established by contract with a local hospital that has an emergency room and an occupational medicine clinic. Employees with illnesses or injuries that are assessed by the nurse practitioner which are too severe to be treated onsite are transferred to the emergency room. Those employees who are receiving treatment by the nurse practitioner and do not respond as expected are referred to the occupational medicine clinic. In this way, a majority of the company's work-related injuries and illnesses are treated within the OHDS.**

Company Two. **Company two has a policy that encourages employees to promptly report symptoms of illness and injuries to the occupational health nurse. The nurse treats minor illnesses and injuries in the plant health office using dressings, ice and over-the-counter medications. She refers more sever problems to the contract physician. This nurse has taken a continuing education course in the recognition and conservative treatment of CTDs and is able to implement early treatment and referral. She also is able to review preventive measures with the employees at each visit.**

Company Three. **At company three the contract clinic's medical director has completed a mini-residency in occupational medicine and has ample knowledge of the risks to which this company's workers could be exposed.**

MEDICAL CASE MANAGEMENT

Company One. **The occupational health nurse practitioner works with the personnel manager to develop a case management system for all employees who are off work with illnesses or injuries lasting more than five days. The system consists of a method for prompt treatment authorization, a referral list for second opinions, assistance in filling out insurance forms, communication with the insurance carrier to ensure timely benefit payments, and ongoing contact with the employee and the family.**

Company Two**. At company two the occupational health nurse and the contract occupational medicine physician maintain close communication about all employees with work-related injuries and illnesses that are not responding to treatment as expected. The occupational health nurse ensures that specialist referrals occur promptly. The nurse practitioner also works closely with the supervisors, proposes modified duty positions and clears these work proposals with the treating physician. This facilitates employees' returning to work as soon as possible.**

***Company Three*.** **At company three the owner functions as the human resources director as well as the manager. As such, she is in close contact with any employee who experiences lost worktime related to industrial injury or illness. She does not, however, have access to her employees' individual medical records, which are maintained confidentially at the contract occupational health clinic. She considers this adequate case management. Her workers' compensation insurance carrier assists her by providing information about helping injured and ill workers return to work quickly. The suggestions have prompted her to increase the frequency with which she makes telephone contact with these employees.**

COORDINATION FOR EMERGENCY SERVICES

Company One. **The safety director, the occupational health nurse practitioner and the head of the security department worked together to develop a system whereby all employees in each department know their exact responsibilities in the event of an emergency. They also discussed their plan with the local fire department that will be responding to emergency calls.**

Company Two. **At company two the occupational health nurse practitioner and the safety director head the team and respond to each emergency. The plant receptionist is responsible for contacting outside emergency organizations and is included in the emergency response team meetings.**

Company Three. **At company three because employees move from one workplace to another instead of having a fixed worksite, no special arrangements were made with emergency organizations. The company, however, did make its own emergency preparations (discussed under "Employee Training.")**

RECORDKEEPING

Company One. **The OSHA 200 Log, the MSDSs and the results from the noise surveillance are maintained in the OHDS office, where the occupational health nurse practitioner can answer employee questions. All employee visits to the OHDS office are documented in the individual employee medical record.**

Company Two. **At company two the OSHA 200 Log, the MSDSs and the results from the CTD surveillance are kept in the OHDS office, where the occupational health nurse can answer employee questions. All employee visits to the OHDS office are documented in the individual employee medical record.**

Company Three. **At company three the OSHA 200 Log and the MSDSs are maintained by the owner and are available for the employees to see upon request. Individual employee medical records are kept at the contract occupational health clinic and remain confidential.**

For more detailed information about recordkeeping, see Appendix 10-2.

SUMMARY

The examples demonstrate how three different employers provide OHDS services using a combination of in-house resources, sub-contractors and government agencies. Some of the sub-contractors bring their services to the premises, while in other situations the employees travel to the contractor. In each case the employer has selected services based on the special characteristics of the business process, the potential exposures within that process, the business location and the employee population.

Each OHDS includes activities aimed at the prevention of exposures, the early recognition and treatment of work-related illnesses and injuries, and a reduction in the severity of and potential for disability from work-related illness and injury.

APPENDIX 10-2

RECORDKEEPING

OSHA requires that certain records be kept. Employee visits to the health office or to an off-site clinic or health care professional's office will generate additional records. Maintaining your records using the resources of your OHDS is a good idea. The occupational health professionals connected with your OHDS have the training to answer your employees' questions about these records and to decide whether their complaints are work-related.

What follows is a description of the health-related records that you should have in your business. It is meant to give you enough information to decide if you want to manage these records within your OHDS. You need to consult the standards or the other references for more details. The Code of Federal Regulations (CFR) numbers or publication titles have been included for your convenience. For further assistance, contact the OSHA-funded, state-operated consultation service.

OSHA-200 LOG

OSHA requires that you keep track of all the work-related injuries and illnesses that occur at your worksites. OSHA Form 200, often called the OSHA-200 Log, is used for this purpose. Another form, the "Supplementary Record of Occupational Injuries and Illnesses" (OSHA Form 101), or its equivalent, also must be kept. Employers often use the "First Report of Injury," required by the workers' compensation system, as this supplementary record.

THE OSHA RECORDKEEPING STANDARD, 29 CFR 1904

This standard also tells how long you must keep the records and how you are to inform your employees about the injuries and illnesses occurring in your company. For more information, see this standard and the Bureau of Labor Statistics' 1986 guidelines entitled "A Brief Guide to Recordkeeping Requirements for Occupational Injuries and Illness," or the more comprehensive "Recordkeeping Guidelines For Occupational Injuries and Illnesses" (both published as OMB 1220-0029).

ENVIRONMENTAL AND EMPLOYEE HEALTH MONITORING RECORDS

When you do any type of environmental monitoring, such as air sampling, OSHA requires that you keep the results. If you test employees for exposure to hazards you must keep this information also. The publication "Access To Employee Exposure and Medical Records," 29 CFR 1910.20, tells you that employees and their representatives must be allowed to see and copy the records, and indicates how long the records must be kept.

RECORDS REQUIRED FOR SPECIFIC HAZARDS

OSHA has issued a number of standards specifying things that you must do when your business involves certain hazards. Often this includes testing employees and the workplace for signs of the hazard. When this is the case, the standard also tells how long you must keep the results of the tests. Three examples of this type of standard are the bloodborne pathogens standard, 29 CFR 1910.1030, the asbestos standard, 29 CFR 1910.1001(m), and the occupational noise exposure standard, 29 CFR 1910.95.

HAZARD COMMUNICATION

The Hazard Communication Standard addresses more than recordkeeping. It tells you how you must communicate to your employees and your community about the chemicals you use or make

in your business. Because the standard requires that you keep certain documents and communicate certain information, we will discuss it here.

The standard says, among other things, that you must keep a list of all hazardous chemicals present at your worksites. You must have labels and signs to warn people about these chemicals. You must have material safety data sheets (MSDSs) for all hazardous chemicals. MSDSs provide information from the manufacturer about the ingredients and health effects of a chemical. In addition, employees must be trained about the chemicals to which they are exposed. The training must include information about what you are doing to protect employees and what they need to do to protect themselves. (See 29 CFR 1910.1200.)

INDIVIDUAL EMPLOYEE HEALTH RECORDS

Employee visits to the health office will generate records that should be kept in order to document what treatment is being provided and how the employee is responding. This data also can be analyzed by an occupational health professional seeking to uncover unrecognized hazards.

An important reminder: The confidentiality of individual employee health information is a fundamental concept of good occupational health practice. Moreover, your employees' legal rights to privacy extend to information that may be contained in their workplace health records. Therefore, access to these records should be controlled by health professionals who understand the requirements of confidentiality and the circumstances under which disclosure may be made. It is not proper for an employer to review individual employee health records. Should an employer wish to examine health information, for example, in order to spot injury or illness trends, this review must be limited to anonymous aggregate data. Such data can be compiled by the health professional who controls the individual employee records or by another person who is properly authorized to examine the records.

APPENDIX 10-3

QUALIFICATIONS OF OHDS PERSONNEL

Once you have decided which safety and health services you want to provide through your OHDS you need to decide who will provide the services. There are several factors to consider:

- **Your OHDS must be organized so that the personnel providing the services are not working alone when state law requires that they be supervised by a registered nurse or physician.**
- **The occupational health professionals you use must have specialized, up-to-date training or experience in the methods of occupational health care.**
- **You must choose whether to hire OHDS personnel as your own employees or whether to contract outside your company for their services.**

OCCUPATIONAL HEALTH PROFESSIONALS

Occupational health professionals are medical doctors (MD), doctors of osteopathy (DO), and registered nurses (RN). They hold a license to practice their professions, and they are entitled to practice independently under this license, using the standard procedures described in Appendix 10-5.

Occupational Medicine Specialists. Occupational medicine specialists are medical doctors (MD) or doctors of osteopathy (DO) who have additional training or experience in the treatment of work-related illnesses and injuries. This training or experience can be acquired in different ways:

- **A number of universities offer residency programs that enable MDs and DOs to become board certified in occupational medicine through the American Board of Preventative Medicine.**
- **Professionals graduating from schools of medicine or osteopathy before January 1, 1984, may qualify for board certification by the "alternative pathway." This involves a combination of education and practical experience in the field of occupational medicine.**
- **Shorter programs, called mini-residencies, offer academic training in occupational medicine.**
- **MDs and DOs can obtain advanced education in occupational medicine by taking continuing education courses.**
- **There are MDs and DOs working in occupational medicine who have gained advanced knowledge through experience working in the field for extended periods.**

A qualified occupational medicine specialist should be capable of performing or managing all the OHDS activities described in Appendix 10-1.

Occupational Health Nurses. Occupational health nurses are registered nurses (RN) who have received specialized training in occupational health. Like physicians with specialties in occupational medicine, occupational health nurses may gain this training through formal college programs, continuing education or experience working in the field. A registered nursing license allows nurses to perform many health evaluation and care functions independently. An occupational health nurse should be capable of performing or managing most of the OHDS activities described in Appendix 10-1.

Nurse Practitioners. Nurse Practitioners are registered nurses who have completed formal advanced training in physical assessment and the management of minor, stable illnesses and injuries. In most states, they are licensed or certified for advanced practice by state licensing boards. Nurse Practitioners perform many health evaluation and care activities independently. They perform physical exams; diagnose health problems using laboratory tests, x-rays or other tests; and treat employees who are ill or injured. In most states, Nurse Practitioners perform any other activities using written protocols developed collaboratively with a physician. Nurse practitioners can take additional training and specialize in the treatment of occupational illnesses and injuries. When working with standard procedures, nurse practitioners should be capable of performing all the OHDS program activities described in Appendix 10-1.

SUPPORT PERSONNEL

Support personnel can provide more limited services. They have received specific training and usually are certified or licensed by the educational institution where they received the training. Sometimes licensing or certification is granted by the state. The scope of practice for support personnel requires that they work under the supervision of licensed health professionals except when delivering first aid. Licensed vocational nurses (LVNs), licensed practical nurses (LPNs), emergency response personnel (sometimes called emergency medical technicians or EMTs), and first aid personnel are in this category.

Licensed Vocational and Licensed Practical Nurses. LVNs and LPNs are licensed by state agencies to perform certain health care activities. These include taking blood pressures and applying dressings. These persons must practice under the supervision of a physician or a registered nurse.

First Aid and Emergency Response Personnel. "First aiders" perform the function of first response. They provide temporary treatment until care of the ill or injured person can be transferred to someone with more advanced training. This includes performing treatments such as splinting and applying ice or pressure dressings, and also transporting the ill or injured. A person does not need a background of formal health care education to be trained in first aid and cardiopulmonary resuscitation (CPR). A certification in first aid usually is granted by training providers such as the American Red Cross after the student completes a standard curriculum and demonstrates competence. When employers assign first aid responsibilities to their employees, proper training, certification and regular updating of the instruction are important: even first aid techniques can be harmful when done incorrectly.

CPR sometimes is included in first aid courses, but a separate class may have to be taken. CPR is the act of providing temporary, life-sustaining artificial circulation and respiration when these functions have stopped. It is performed before and during the stricken person's transfer to a medical facility. As with first aid, persons completing CPR training are certified by the organization offering the training. CPR performed incorrectly can injure the person receiving it. When employers use employees as "first aiders" and expect them to perform CPR, the employees must be thoroughly trained, and this training must be updated at least annually.

WARNING: It is possible for persons rendering first aid or CPR to be exposed to the viruses that cause hepatitis B and AIDS. This is because the "first aider" can come in contact with body fluids, such as blood, that might contain these viruses. Because of this potential for exposure, all employees with first aid or CPR duties are covered by the full scope of OSHA's Bloodborne Pathogens standard, 29 CFR 1910.1030. The standard requires that an employer train these employees in how to protect themselves from potentially infectious body fluids. It also requires that the employer provide personal protective equipment, offer the hepatitis B vaccine, provide medical follow-up or any occupational exposure, and meet other requirements.

Emergency response personnel, sometimes called emergency medical technicians (EMTs), have received advanced training in first aid, CPR and other life support techniques. With certain

restrictions, they can perform sophisticated emergency procedures and transport ill and/or injured people.

The OHDS should retain records of the original training, licenses, update courses and certification of all employees participating in the delivery of occupational health services, including first aid, CPR and/or emergency response activities. The Bloodborne Pathogens standard requires that all training records be kept for 3 years and that the records contain training dates, the content or a summary of the training, names and qualifications of trainers, and names and job titles of trainees.

Like other employees with first aid responsibilities, EMTs are covered by the full scope of OSHA's Bloodborne Pathogens standard.

APPENDIX 10-4

EVALUATING THE QUALIFICATIONS OF HEALTH CARE PROFESSIONALS

Whether you choose to employ professional health care personnel or to contract with outside vendors it is important to evaluate their qualifications. Remember that occupational health professionals are people selling a service. You should use the same smart consumer skills with physicians and registered nurses that you apply to anyone who is trying to sell you something.

Here are some questions to ask prospective professional health care providers:

- **What type of training has the health care provider had?**

  - **<u>Physicians</u>:**
    Graduation date - note all degrees;
    Request a copy of current MD or DO license;
    Types of specialization certification;
    Years of experience in occupational medicine; and
    Titles of continuing education courses taken in the last two years.

  - **<u>Registered Nurses</u>:**
    Graduation date - type of degree;
    Graduate degrees;
    Types of specialization certification;
    Years of experience in occupational health;
    Titles of continuing education courses taken in the last two years; and
    Copy of current RN license.

- **In what type of industries has the prospective health care provider had experience?**
- **What kind of information does the prospective health care provider want to know about your business? A prospective health care provider should ask questions about the following:**

  - **Your work processes;**
  - **Your known or potential hazards;**
  - **Your facilities, type and location;**
  - **Number of employees;**
  - **Standards and/or regulations that apply in your business;**
  - **Health surveillance programs, current or past;**
  - **Collective bargaining contracts;**
  - **Any previously issued OSHA citations;**
  - **Existence and specifics of a safety and health policy;**
  - **Current method of providing OHDS services; and**
  - **Other health care providers involved in providing services.**

- **What does this provider know about OSHA recordkeeping requirements?**
- **Given the above information, what would this provider do to contribute to the improvement of your safety and health program?**
- **Can this provider provide references?**
- **Has there ever been an OSHA inspection in a facility with which this provider was associated? What was the outcome of that inspection?**

APPENDIX 10-5

PROTOCOLS: ESTABLISHED STANDARDIZED PROCEDURES

Protocols are written, standardized plans for providing medical treatment. They are comparable to the standardized procedures that you already may use in some areas of your business, such as your system for maintaining accounts or servicing company equipment. Your OHDS needs a set of protocols: written procedures for treatment of work-related illness and injury, for response to emergency situations, for collection of data from health surveillance programs and for all the other activities of your medical program.

These standardized procedures are not meant to interfere with an occupational health professional's treatment of work-related injury and illness. They are aimed at ensuring the early detection of work-related health problems through consistent and thorough evaluation of employee health complaints.

Standardized procedures also promote the use of the most up-to-date therapies for work-related illness and injury. They are particularly important if you are using several contractors to provide your company's OHDS services, because they help ensure that all your employees receive the same type of care. (See Appendix 10-1 for ideas on how and when employers sometimes use contractors.) Even if company employees provide your OHDS services there still should be standardized procedures written for all health surveillance programs, health care and first aid. These standardized procedures should be communicated to all health care employees and subcontractors who provide treatment for your workers.

A Comprehensive Guide for Establishing an Occupational Health Service, published by the American Association of Occupational Health Nurses (AAOHN), includes information on developing protocols. To obtain a copy of this guide, contact AAOHN, 50 Lenox Point, NE., Atlanta, Georgia 30324, telephone 404/262-1162.

11.

CHAPTER 11

SAFETY AND HEALTH TRAINING

INTRODUCTION

Can your employees explain every existing and potential hazard to which they are exposed? Do they know how to protect themselves and their co-workers from these hazards? Can they tell you precisely what they must do in the event of a fire or other emergency?

Training can help your employees develop the knowledge and skills they need to understand workplace hazards and protect themselves. Safety and health training is vital to every workplace. This is the fourth major element in OSHA's Safety and Health Program Management Guidelines.

Safety and Health education is most effective when integrated into your company's overall training in performance requirements and job practices. It can range from the simple precautionary warnings given new workers when they are first shown the job to more elaborate, formalized instruction.

How effective is your company's training for safety and health? This chapter will help in designing (or revising), implementing and evaluating the worker safety and health training that you provide. It also will give information on OSHA requirements for training and will tell you where to find further OSHA references and other assistance.

DESIGN

First Things First: Commitment and Involvement

Before training begins be sure that your company policy clearly states the company's commitment to health and safety and to the training program. This commitment must include paid work time for training and training in the language that the worker understands. Involve both management and employees in developing the program.

OSHA has developed voluntary training guidelines to assist you in developing an effective program. These guidelines, plus information on training required by current standards, can be found in OSHA Publication 2254 (Revised 1992), "Training Requirements in OSHA Standards and Training Guidelines."

You will want your training program to focus on health and safety concerns that are most appropriately addressed by training. Are there another, preferred protection methods, for example, engineering controls or personal protective equipment? As discussed in Chapter 8, it is important to determine the best way to deal with a particular hazard. Once you have decided that a safety or health problem can best be addressed by training (or by another method combined with training), be sure to follow up by developing specific training goals based on your particular needs.

TEACHING AND LEARNING PRINCIPLES

Training your supervisors and employees need not be complex or lengthy. In most small businesses that have extensive training needs more formalized training may be necessary. In either case, five basic principles should guide your training program:

1. Perceived Purpose: The trainee must understand the purpose of the instruction. Therefore, the beginning of any training program should focus on why this instruction will be useful.

2. Order of Presentation: Information should be organized to maximize understanding. For example, if you are teaching employees the proper way to use a respirator, the order in which you present the material should match the steps the employee must use to choose, fit, wear and maintain the respirator.

3. Appropriate Practice: We learn best when we can immediately practice and apply newly acquired knowledge and skills. Therefore, job safety and health instruction is best given at the worksite where demonstration, practice and application can be immediate. When onsite instruction is not feasible, arrange for your employees to practice and apply the new knowledge and skills as soon as possible.

4. Individual Differences: We are individuals, and we learn in different ways. A successful training program incorporates a variety of learning opportunities such as written instruction, audio-visual instruction, lectures and hands-on coaching. Also, we learn at different speeds. The pace of the training should recognize these differences. One effective way to learn is by teaching others. Therefore, after the initial instruction and some practice, it can be very helpful to divide the group into teacher/learner teams, sometimes pairing a rapid learner with a slower one, but also giving the slower learner a chance to teach.

IDENTIFYING TRAINING NEEDS

New employees need to be trained not only to do the job but also to recognize, understand and avoid potential hazards to themselves and others in their immediate work area and elsewhere in the workplace. Contract workers also may need training to recognize your workplace's hazards or potential hazards. Experienced workers will need training if the installation of new equipment changes their job in any way or if process changes result in new hazards or increases in previously existing hazards. All workers may need refresher training to keep them prepared for emergencies and alert them to ongoing housekeeping problems.

Workers needing to wear personal protective equipment (PPE) and persons working with high risk situations will need special training. In this latter category are workers who risk occupational exposure to blood or other potentially infectious materials. These workers, who risk exposure to the viruses that cause AIDS and hepatitis B, must be provided training and other protective measures under OSHA's Bloodborne Pathogens standard (Part 1910.1030 of Title 29 of the Code of Federal Regulations). For more information, you should consult the standard. An overview of the standard's requirements and of methods for reducing the risk of exposure can be found in OSHA Publication 3127, "Occupational Exposure to Bloodborne Pathogens."

Specific hazards that employees need to know about should be identified through total site health and safety surveys, job hazard analysis and change analysis. Company accident and injury records may reveal additional hazards and needs for training. Near miss reports, maintenance requests and employee suggestions may uncover still other hazards requiring employee training. For further information, see Chapters 7 and 9.

As you initiate or revise your safety and health program, you will probably employ some controls that require the cooperation of your workers and training to help instill this cooperation. Examples include employees' wearing PPE properly or carrying out certain tasks with special precautions. For further information on hazard prevention and control, see Chapter 8.

DEVELOPING LEARNING ACTIVITIES

Develop your learning activities to meet the training needs you have identified. Keep in mind the five learning principles described above. Be imaginative in your choice of methods and materials and make full use of your resources. One way to get ideas is by looking at the training programs of companies in your industry. Another is to consult such organizations as the National Safety Council, the American Society of Safety Engineers, the American Industrial Hygiene Association, the Bureau of Labor Statistics, OSHA-funded and state-operated consultation programs, and the OSHA Office of Training and Education.

SOME COMMON TYPES OF SPECIALIZED TRAINING

Safety and Health Training for Managers. A good safety and health program is impossible without support and understanding from the top. Training managers in their responsibilities is necessary to ensure their continuing support and understanding. Formal classroom training may not be necessary. The subject can be covered periodically as a part of regular management meetings.

Managers need to understand the importance of the safety and health program. It is their responsibility to communicate the program's goal and objectives to their employees. Their role also includes making clear assignments of safety and health responsibilities, providing authority and resources to carry out assigned tasks, and holding subordinate managers and supervisors accountable.

Training should emphasize the importance of managers' visibly showing their support for the safety and health program. And, of course, they should be expected to set a good example by scrupulously following all the safety and health rules. They also should actively encourage employee involvement in safety and health problem identification and resolution. For further information on management roles, see Chapter 4.

These topics can be covered and illustrated with examples in the relatively short time. They should be repeated at least annually.

Safety and Health Training for Supervisors. All employees should be involved in matters of safety and health. However, workers often are promoted to supervisory positions without adequate knowledge of how to train other employees in the safe and proper way to do the job. It is not unusual for them to lack full knowledge of the company's policies and procedures. They may need additional training in hazard detection and control, accident investigation, their role in ensuring the maintenance of physical protections, emergency handling, and, in general, how to supervise.

Since supervisors do a lot of on-the-job-training, they also will need to be taught how to train and how to reinforce training. They may need help in learning how to apply fair and consistent discipline. Such training can be provided by the supervisor's immediate manager, by the Safety Department or by outside resources.

Job Orientation. The format and extent of orientation training will depend on the complexity of hazards and the work practices needed to control them. For many small businesses job orientation may consist of a quick review of site safety and health rules, hazard communication training for the toxic substances present at the site, and a run-through of the job tasks. This training usually is presented by the personnel officer and/or the new employee's supervisor.

For larger workplaces with more complex hazards and work practices to control them, orientation should be structured carefully. You want to make sure that new employees start the job with clear understanding of the hazards and how to protect themselves and others. Employers frequently provide a combination of classroom and on-the-job training. Many have found it useful to have fellow employees trained to provide peer training. Others have followed up supervisory training with a buddy system: a worker with lengthy experience is assigned to watch over and coach a new worker, either for a set period of time or until it is determined that training is complete.

Whether the orientation is brief or lengthy, the supervisor should make sure that before new employees begin the job, they receive instruction in responding to emergencies. (See discussion below.)

Vehicular Safety. In 1987 over-the-road motor vehicle accidents were the leading cause of work-related deaths. Given the grim reality of this hazard, all workers operating a motor vehicle on the job should be trained in its safe operation. In 1990 OSHA proposed a standard requiring that such workers wear seat belts and receive safe driving training. Training in safe loading and unloading practices, safe speed in relation to varying conditions, and proper vehicle maintenance has been found helpful in reducing work-related vehicle injuries.

Do not overlook the training of on-premises vehicle drivers. These drivers can be exposed to such hazards as vehicle imbalance, loads tipping while the vehicle is cornering and dangers related to battery charging.

We urge you to emphasize in the strongest possible terms the benefits of safe driving and the potentially fatal consequences of unsafe practices.

Personal Protective Equipment (PPE). Supervisors and workers alike must be taught the proper selection, use and maintenance of PPE. Since PPE sometimes can be cumbersome, employees may need to be motivated to wear it in every situation where protection is necessary. Therefore, training should begin with a clear explanation of why the equipment is necessary, how its use will benefit the wearer and what its limitations are. Remind your employees of your desire to protect them and of your efforts, not only to eliminate and reduce the hazards, but also to provide suitable PPE where needed. Explain how essential it is that they do their part to protect their health and safety.

Individual employees need to become familiar with the PPE they are being asked to wear. This is done by handling it and putting it on. Training consists of showing employees how to put the equipment on, how to wear it properly and how to test for proper fit. Proper fit is essential if the equipment is to provide the intended protection. It is especially important in the case of negative pressure respirators, so special fit testing is necessary.

The effectiveness of some PPE also depends on proper maintenance. Employees must be trained to maintain the equipment themselves or to see that others maintain it properly. Vendors of the equipment and manufacturers' instructions may be your best sources of maintenance information.

Does your company have employees who do not regularly use PPE, but who will be expected to use it during an emergency response? These employees also must be trained in PPE use, fit and maintenance. In your overall training program, include simulated emergency training exercises where employees use the equipment. Repeated and even frequent training is often necessary. For example, your emergency response plans may call for using self-contained respirators to escape from atmospheres immediately dangerous to life or health. You should conduct frequent exercises in finding, donning and properly using these protective devices. If they ever are needed, you will want your employees capable of responding quickly and knowledgeably.

Expect to repeat the PPE training for new hires, contract workers and employees in newly assigned jobs.

For more information about PPE, see OSHA Publication 3077, "Personal Protective Equipment," and OSHA Publication 3079 (Revised 1988), "Respiratory Protection."

<u>Emergency Response</u>. Train your employees to respond to emergency situations. Every employee at every worksite needs to understand:

- **Emergency telephone numbers and who may use them,**
- **Emergency exits and how they are marked,**
- **Evacuation routes, and**
- **Signals that alert employees to the need to evacuate.**

-

In addition, practice evacuation drills at least annually, so that every employee has a chance to recognize the signal and evacuate in a safe and orderly fashion. Supervisors or their alternates should practice counting personnel at evacuation gathering points to ensure that every worker is accounted for.

Do not forget anyone at your site when you are practicing for emergencies. You should have procedures to account for visitors, contract employees and service workers such as cafeteria employees. One effective practice technique is secretly to have one or two employees simulate an injury or other immobilizing problem during an evacuation drill. They could, for instance, slip away to a stairwell not on the evacuation route and there await discovery and rescue. Such an experience can demonstrate forcefully to your supervisors and alternates the importance of an accurate count.

Additional special instruction and drilling may be necessary at sites where weather or earthquake emergencies are reasonable possibilities. For example, where there is a good chance of tornadoes, employees should learn to distinguish the signals for evacuation and for taking shelter and should practice responses to both. For further information on planning for emergencies, see Chapter 8.

If you have established emergency response teams at your workplace, all members of these teams are covered by OSHA's Bloodborne Pathogens standard (Part 1910.1030 of Title 29 of the Code of Federal Regulations), which includes training requirements.

Periodic Safety and Health Training. At some worksites, complex work practices are necessary to control hazards. Elsewhere, occupational injuries and illness are common. At such sites, it is especially important that employees receive periodic safety and health training to refresh their memories and to teach new methods of control. New training also may be necessary when OSHA standards change or new standards are issued. It is important to keep these sessions interesting. Some companies have found it very effective to give employees the responsibility to plan and present periodic safety and health training. However, the success of this method depends upon employees being provided adequate training resources and support to develop their presentations.

Most general industry worksites use monthly safety meetings for this training. In construction and other high-hazard industries where the work situation changes rapidly, weekly meetings often are needed. These meetings serve to remind workers of the upcoming week's tasks, the environmental changes that may affect them and the procedures they may need to protect themselves and others.

What is called one-on-one training is possibly the most effective training method. The supervisor periodically spends some time watching an individual employee work. The supervisor meets with the employee to discuss safe work practices, bestow credit for safe work and provide additional instruction to counteract any observed unsafe practices. One-on-one training is most effective when applied to all employees under supervision and not just those with whom there appears to be a problem. This is because the positive feedback given for safe work practices is this method's most powerful tool. It helps workers establish new safe behavior patterns. It also recognizes and thereby reinforces the desired behavior.

CONDUCTING THE TRAINING

If employees are to learn and to improve they must feel motivated. Here are some suggestions for enhancing the success of your safety and health training:

- Prepare employees for training by putting them at ease.
- Recruit employees who show signs of being good trainers of their co-workers. Prepare them to conduct this peer training.
- Explain the job or training topic. Determine how much your employees already know about it.
- Boost your employees' interest in training by helping them understand its benefits. For example, training can reduce injuries and near misses; training can enhance productivity and overall job performance, thereby improving the chance for advancement and other rewards.
- Pace the instruction to the trainees' learning speed. Present the material clearly and patiently.
- Present only as much information in one session as your employees can master.
- Have your employees perform each step of the operation and repeat your instructions and explanations. Have them repeat a task until you are satisfied they know how to do it.
- Encourage employees to help each other by dividing the group into teacher/learner pairs or practice pairs.
- Check frequently for correct performance during the initial practice period. Taper off on surveillance as the trainees become more proficient.
- Encourage your employees to build the new skill into the way they work best, but caution them not to change the newly learned procedure without first checking with you or their supervisor.

EVALUATION

Evaluation will help you determine whether the training you have provided has achieved its goal of improving your employees' safety and performance. When carefully developed and carried out, the evaluation will highlight your training program's strengths and identify areas of weakness that need change or improvement.

You should generate a plan for evaluating the training sessions as needs are being identified and training content developed. This important part of your training effort should not be put off until training is completed. Here are some ways you can evaluate your training program:

- Before training begins determine what areas need improvement by observing workers and soliciting their opinions. When training ends test for improvement by again observing workers. Ask them to explain their jobs' hazards, protective measures, and newly learned skills and knowledge.
- Keep track of employee attendance at training sessions. Training will not work for an employee who does not show up. Absenteeism can signal a problem with the worker, but it also can indicate a weakness in training content and presentation.
- At the end of training ask participants to rate the course and the trainer. This can be done in informal discussion, or confidentiality can be assured by a written questionnaire.
- Compare pre- and post-training injury and accident rates. The periods of time being compared must be long enough to allow significant differences to emerge if training has made a difference.

It often is easier to conduct an activity than to judge it. But do not ignore this evaluation phase. It will allow you to calculate your training program's bottom line profitability. Have the goals of training been achieved? Do the results warrant offering the training again at some later date? How can the program be improved? Once you have made the effort to provide employee safety and health training, you certainly want to be able to answer these questions.

RECORDKEEPING

Even if you operate a very small business, it is to your advantage to keep training records. A simple form is all that you need, one that identifies the trainee, the topic or job, and the training date, with space for a brief evaluation of the employee's participation and success. These records will help you ensure that everyone who needs training receives it, that refresher courses are provided at regular intervals and that documentation is available, when needed, to show that training was appropriate. See Appendix 11-1 for one example of an easy to maintain training record.

SOURCES OF ASSISTANCE

You can obtain additional help in developing training programs and identifying training resources -- often free of charge -- from a variety of organizations. These include:

- OSHA-Funded state onsite consultation programs for employers full-service area offices,
- State agencies that have their own OSHA-approved occupational safety and health programs,
- OSHA full-service area offices,
- Local safety councils
- OSHA's Office of Training and Education, and
- OSHA-funded training grantees.

You can find specific OSHA-mandated training requirements in OSHA Publication 2254 (Revised 1992), "Training Requirements in OSHA Standards and Training Guidelines," and OSHA Publication 3127, "Occupational Exposure to Bloodborne Pathogens."

SUMMARY

The content of your training program and the methods of presentation should reflect your company's training needs and the particular characteristics of the workforce. Therefore, identification of needs is an important early step in training design. Involving employees in this process and in the subsequent teaching can be highly effective.

Whether you offer formal classroom training or on-the-job instruction, use the five principles of teaching and learning to maximize your program's profitability. Communicate the purpose of training. Present information in a clear, understandable manner and a logical order. Give trainees the opportunity to practice the skills being taught. Let employees know if they are performing a new skill incorrectly, but perhaps even more important, give positive feedback when they are performing correctly. Recognize that we are all individuals, and that we learn in different ways. Provide a variety of different learning opportunities and pace your instruction and practice period so that all trainees -- slow and fast learners -- have the time they need to absorb the new skills and knowledge.

Your program should be geared toward employees recognizing hazards and learning ways to protect themselves and their coworkers. You especially may need to target new hires, contract workers, employees who need to wear personal protective equipment, workers in high risk areas and workers who risk exposure to bloodborne pathogens. Do not overlook the seasoned employee whose job changes as a result of new processes or materials. And the entire workforce needs periodic refresher training in responding to emergencies.

Plan from the initial design stage to evaluate your training program. An effective evaluation will identify your program's strengths and weaknesses, establish whether training goals are being met and provide a basis for future program changes.

Recordkeeping will help ensure that all who need training receive it. A simple form can document both your efforts to teach and your employees' success at learning hazard recognition and protection.

Finally, do not hesitate to go outside your company to seek help in designing and conducting your training. Numerous organizations are ready to assist you, often at no cost to you.

APPENDIX 11 - 1

EMPLOYEE TRAINING RECORD

Name of Employee: _____

Employee Number: _____

Department: _____

Occupation(s): _____

TRAINING SUBJECT	DATE TRAINED	DATE RE-INSTRUCTED	COMMENTS

I have received and understood the safety and health training/repeat instruction list above and acknowledge that it has been given to me in my native tongue.

EMPLOYEE SIGNATURE	DATE	SUPERVISORS SIGNATURE	DATE

12.

CHAPTER 12

EVALUATING YOUR SAFETY AND HEALTH PROGRAM

INTRODUCTION

The scenario: Your safety and health program is in place. You have set your goal for the year and clearly stated the objectives, procedures, and activities necessary to meet that goal. Responsibilities have been defined and clearly assigned. Adequate authority and resources have been allocated. People have been trained in their safety and health program roles, and they understand the consequences of failing to perform their assignments.

Your responsibility for employee safety and health does not stop here. The next step -- a critical one -- is to evaluate how well your safety and health program is working.

This process is more than an inspection or an audit. Inspections are necessary to look at the facility, the process and the individual jobs in order to identify and then to eliminate or control any hazards that may exist. Audits focus on program activities and seek to determine whether specific objectives have been met. For example, if you are assessing employee participation by looking at the activities of the safety committee you will want to know if that committee met at the intervals specified, and if most of the members attended each meeting. These are audit questions.

But beyond this simple accounting are larger questions. For example, has employee participation at safety committee meetings helped improve the worksite's safety and health program? How is the work of the safety committee helping you meet your goal? These are the kinds of issues addressed by an evaluation.

A safety and health evaluation looks at the systems you have created to carry out your safety and health program. It asks if these systems are working effectively and efficiently. All systems that contribute to your safety and health program should be reviewed. These should include management leadership and the evaluation of that leadership, the analysis of the worksite to identify hazards, hazard prevention and control, accident and near miss investigations, employee involvement, safety and health training, use of personal protective equipment (PPE), the health program, and the emergency response program. The site may have additional programs or systems that contribute to the safety and health program. You will need to evaluate these also.

Who should conduct the evaluation? Although evaluations can be performed by worksite employees, they are best done by people who are knowledgeable about the site's processes and managing safety and health programs. The evaluator should not work at the site being evaluated. The fresh look an outsider brings produces a more accurate and helpful evaluation. This outsider may come from corporate headquarters, another worksite within the company, an insurance company or a consulting firm.

Evaluation often causes anxiety for workers. You may be able to reduce that anxiety by letting your employees know that the evaluator will be focusing on systems and not on people.

Three useful tools for this evaluation are document review, employee interviews and review of site conditions. These tools will provide the basis for an evaluation report. This report should contain a list of the programs or systems reviewed and a narrative account of the examination of each system or program. It also should contain a schedule of needed changes with target completion dates, responsible parties, and space to indicate the date when changes are actually completed. Some reports include pictures of excellent situations and those needing improvement. Some provide a grading system, so that each year's results can be compared quickly to previous years. This report should be available to any employee who wants to read it. This chapter will explain in detail how you can accomplish this evaluation.

WHAT SHOULD BE EVALUATED?

Ideally, everything that you know to be contributing directly to your safety and health program should be evaluated. OSHA's Safety and Health Program Management Guidelines can help you determine which areas of your program need evaluation. These are the four major areas of the Guidelines, that are called Major Elements:

1. The demonstration of management leadership and employee involvement through:

    - Setting and communicating the safety and health policy;
    - Setting and communicating a clear goal and objectives;
    - Being visibly involved in employee safety and health;
    - Assuring employee involvement in safety and health problem identification and resolution;
    - Assigning clear responsibility for safety and health;
    - Giving adequate authority and assuring efficient use of resources;
    - Holding all personnel accountable; and
    - Assuring quality.

2. **Worksite analysis to identify existing and potential hazards through:**

   - **Comprehensive safety and health hazard surveys;**
   - **Analysis of planned changes to identify hazards that might be introduced;**
   - **Routine hazard analyses, such as:**
     - **Job hazard analysis (also known as job safety analysis),**
     - **Process hazard analysis (used in industries with complex and hazardous processes), and**
     - **Phase hazard analysis (used mainly in construction);**
   - **Periodic worksite inspections, including:**
     - **Self-inspections conducted by supervisors in their work areas, and**
     - **General inspections of the entire site conducted by safety and health staff;**
   - **Employee reports of hazards;**
   - **Work practice control; and**
   - **Analysis of injury/illness trends.**

3. **Hazard prevention and control through:**

   - **Engineering controls;**
   - **Work practice control;**
   - **Personal protective equipment;**
   - **Administrative controls;**
   - **Disciplinary systems to enforce controls;**
   - **Preventive maintenance;**
   - **Emergency preparedness; and**
   - **Medical program.**

4. **Safety and health training to ensure that all employees know how to protect themselves and others from existing and potential hazards of the worksite.**

WHO SHOULD EVALUATE

Evaluators can be drawn from the workplace safety and health department or the safety committee, but the best evaluators will be people possessing fresh vision. They will not be involved in the day-to-day operations of the site. Look in the corporate safety department, another worksite of the company, insurance companies and outside consulting firms. Or have two activity managers switch places and evaluate each other's results.

Many workers' compensation insurance carriers offer their clients the services of a certified safety professional and a certified industrial hygienist. These experts are qualified to review your program activities.

Evaluators should be knowledgeable in the technical aspects of occupational safety and health, the management of safety and health, and the evaluation of programs. Of these three areas, management of safety and health is the most important.

TOOLS FOR COLLECTING INFORMATION USED IN EVALUATION

There are three indispensable evaluation tools for judging the effectiveness of occupational safety and health program management. These are:

- Document review,
- Interviews with employees at different levels, and
- Review of site conditions.

See Appendix 12-2 for a detailed description of how to use these tools.

Documentation. Every worksite will have, at an absolute minimum, written accident reports and the OSHA log of injuries and illnesses as required by law. Major companies should have written procedures and records of all their safety and health programs. The evaluator should compare the written program to the written records of what occurred.

Interviews. In addition to the documentation, interviews can be very helpful in establishing what has occurred. We use two kinds of interviews, formal and informal. The formal interviews are conducted privately with randomly selected employees who are asked preselected questions. Informal interviews occur at employee work stations and generally follow a list of topics.

To assess how well the worksite safety and health policy is communicated and understood and how well the disciplinary system is working, ask the employees to explain them.

To gauge the effectiveness of safety and health training, interview hourly employees and first-line supervisors. Ask employees to describe what hazards they are exposed to and how they are protected. Ask them to explain what they are supposed to do in several different types of emergencies. Ask supervisors how they teach, how they reinforce the teaching, how they enforce safety and health rules and safe work practices and what their responsibilities are during emergency situations.

Interviews with management should focus on its involvement in and commitment to the safety and health program. Ask how the policy statement was created and how that statement is communicated to all employees. Ask what information management receives about the safety and health activities and what action management takes as a result of that information. Ask how management's commitment to safety and health is demonstrated to the workforce.

Review of Site Conditions. The conditions at the worksite reveal much about the safety and health program's effectiveness. Worksite conditions can be observed indirectly by examining documents such as inspection reports of hazards, employee reports of hazards and accident/incident investigations.

Site tours also may reveal hazards. Be careful, however, that the site tour does not become a routine inspection with emphasis only on hazard correction. When a hazard is found, certainly take steps to ensure its correction. But in addition, ask what management system(s) should have prevented or controlled the hazard. Determine why system(s) failed and either change them or take other appropriate corrective measures. Chapter 8 has more information on this technique. See especially the hazard analysis flow charts, Appendix 9-4.

DO PROGRAM ACTIVITIES GET RESULTS?

THE TARGET OF EVALUATION

Time and resources can be wasted when safety and health program activities do not achieve the desired results. Each year activities should be planned with the intention of achieving specific objectives. These objectives, in turn, are geared toward reaching the year's safety and health program goal.

As an example, a company's *goal* is:

> Develop a comprehensive safety and health program that effectively protects employees by preventing or controlling existing and potential workplace hazards.

To reach this goal, one *objective* this year is:

> Develop a comprehensive preventive maintenance program.

The company expects that achieving this objective will require more than one year. For the current year the company plans to undertake two *activities*, each with governing *procedures*:

> Activity 1: Create preventive maintenance checklists for all classes of company vehicles.
>
> Procedure: By February 1, Transportation Department Chief will hold joint meeting of all drivers and vehicle maintenance mechanics to determine maintenance needs and create checklist of preventive maintenance tasks. Checklist will assign responsibilities to appropriate staff, indicate required time frames and provide for sign-off.
>
> Activity 2: Conduct a survey of non-vehicle machinery throughout the worksite to determine preventive maintenance needs.
>
> Procedure: By February 1, each Department will submit to Maintenance Department a list of all machinery located within the Department, together with notations regarding operating problems, hazards and maintenance needs. By March 1, Maintenance Department Chief and staff will visit each department to examine machinery and to discuss needs with operators. By April 1, a comprehensive report will be submitted to Vice-President for Operations, inventorying machinery and indicating maintenance needs and suggested maintenance schedule.

The end-of-year safety and health program evaluation will determine whether these activities were conducted and whether they had the desired effect, i.e., successfully began the process of developing a comprehensive preventive maintenance program.

The evaluation then will examine the value of this objective: did the achievement of this phase of a preventive maintenance program move the company closer to its targeted safety and health goal? If this analysis finds program efforts that are ineffective and do not contribute to the goal, the evaluation should include recommendations for program changes for the next year. For more information about setting a goal and objectives, see Chapter 2.

ACTIVITIES AND PROCEDURES

Do the actual safety and health program activities and the procedures for implementing them bring the expected results?

Larger worksites. Large companies will have written procedures for the major activities of their safety and health program. They also will have written records of those activities as they were performed. Evaluating whether the written procedures were followed in the period evaluated, or how well they were followed, is an audit function of quality assurance or program evaluation.

Smaller worksites. Even if yours is a smaller business with more limited recordkeeping you still should put some effort into thinking about how safety and health activities were carried out for the period evaluated and whether the results achieved were those expected at the outset.

Sample questions. The precise questions you should ask will depend upon the activity being audited and the way the activity was to be accomplished. For example, if plans call for a certain person to carry out the inspection program, did that person actually conduct the inspections? In many workplaces inspections are conducted by the person with the most expertise along with members of the site safety and health committee. Was the expert present during every inspection? Did the employee members always participate?

Other questions about inspections might include the following:

- Is there evidence that the inspectors went to every part of the worksite that was specified in the inspection plans?
- Did their reports indicate that the inspectors were finding the kinds of hazards they were trained to recognize?
- Was hazard correction appropriately assigned?
- Were the hazards corrected in an appropriate and timely manner?
- Was the correction tracked to completion?

Similar questions should be asked about each activity under the safety and health program. When a discrepancy is found between the original plan and actual execution of the activity, assess which way best meets the safety and health objectives and goal. Then make sure that everyone follows that procedure.

OBJECTIVES

The objectives connect the goal for the safety and health program to the program procedures and activities.

<u>Objectives that can be audited.</u> Sometimes a program objective will be to complete a new or improved activity. For example, suppose the objective states, "Complete one job safety analysis each month, with follow-up revision of safe work procedures and employee training in the following month." In this case the objective describes the frequency of activities rather than the desired result. An evaluation of this objective involves no more than determining whether the activities occurred. Therefore, an audit will be appropriate. Look for evidence that job safety analyses were done each month. Is there evidence that revisions of procedures and training also were made each month as a result of the previous month's job safety analysis? If the answer is yes and other program evaluation reveals no need to do anything differently, the frequency of these activities will become an ongoing subject of audit.

Objectives that must be evaluated. Ordinarily, objectives should focus on the results desired from the program activities. For example, an objective might state, "Identify and assign all areas of safety and health responsibility that are not presently clearly assigned, so that all safety and health responsibilities can be successfully carried out." A set of activities will be needed to accomplish this objective. The activities might include assigning a committee to list all the safety and health responsibilities; reviewing assignment of those responsibilities; identifying missing, duplicate and unclear assignments; and recommending clearer assignments.

In this case the evaluation will focus on whether the objective was accomplished. That is, were all areas of safety and health responsibilities that were not clearly defined actually identified and clarified? Perhaps these areas were identified but the corrections not made because the Personnel Department needed to first rewrite seven major job descriptions to get the responsibilities correctly assigned. This, then, leads to a new objective to get the seven job descriptions rewritten with clearer assignment of safety and health responsibilities. If all safety and health areas have been identified and clarified this objective will not lead to another objective.

As another example, say the objective is to increase employee safety and health awareness by involving the employees' families in a safety and health awareness program. The evaluation will seek to measure the difference between employee awareness before the family program and after it. One way to measure that difference is to ask them if they thought their awareness was increased. Still another is to ask supervisors if they perceived a difference in employee awareness after the family program began. If, after using some type of meaningful measurement tool, the findings indicate that the program has increased awareness it will make sense to designate the family program an ongoing activity subject to audit. If the findings show no measurable increase in awareness the family program can be changed or another activity substituted. The altered objective then will be to increase employee awareness by this new means.

GOAL

The goal is the ultimate intention of the safety and health program, its basic aim.

Objectives should be evaluated to make sure they are leading to the program goal. For example, suppose the goal is the reduction of employee exposure to hazards and one of the objectives to achieve that goal is to hold monthly safety meetings for all employees. Since this is an activity objective it can be audited to determine whether safety meetings are actually being held. But the next question is, "Did achieving this objective help fulfill the goal of the safety and health program?" In other words, did the safety meetings help employees understand the hazards to which they are exposed and result in plans to reduce exposure?

There are various ways to collect such information. A sign-off sheet can indicate who attended the training. The same sheet can ask employees to describe hazards and potential hazards that exist in their work area and ways to better control them. If there is no sign-off sheet interviews with some randomly selected employe es can reveal their opinion of whether the meetings improved their understanding of hazards and resulted in plans to control them. Interviews with supervisors can reveal whether employees exhibited better understanding after training.

If the results indicate that not much was learned at these sessions, ask further questions to see what went wrong. In this way, all the objectives can and should be checked to see if they are helping achieve the goal.

Program evaluation can identify activities that are not really helping to improve worksite safety and health. In so doing, evaluation can save you time, effort and money.

EVALUATION JUDGMENTS

The important work of gathering information about safety and health program activities is the most time-consuming part of program evaluation. It is, however, the easiest to understand and accomplish. The hardest part is making judgments about program effectiveness.

To assist smaller businesses in making these judgments, a sample checklist is provided in Appendix 12-1. It can be used in deciding what information should be gathered and what judgments need to be made. Suggested evaluation questions in the previously cited examples and a sample section of evaluation instructions in Appendix 12-2 can provide additional guidance.

Employers should draw up appropriate, site-specific procedures for gathering information and making judgments. You may also want to add environmental, product safety or security considerations to the evaluation process. The questions you ask should be based on individual site program activities and site objectives. The sample question in Appendix 12-3 may be helpful.

Insist that the evaluator determine the program's bottom line profitability, its real benefit. In other words, which activities contribute to the safety and health goal and which do not? Judgments and decisions made by evaluators should be driven by this quest for profitability, by which we mean improvement in safety and health program. Insist that the hard questions about program effectiveness be addressed.

HOW TO USE THE EVALUATION

The evaluation will prove valuable only if it leads to improved performance in meeting the safety and health goal. Some of the recommendations that result from the evaluation will be for one-time corrections. Many, however, will involve changing emphasis or trying new activities. These recommendations should be incorporated into the objectives for the next year. Consider establishing, as a permanent objective, an audit of the procedures that your program sets for safety and health program activities. See Chapter 2 for more information about establishing objectives.

Larger Worksites. The evaluation should result in a written report with written recommendations and documented follow-up to those recommendations. It may be useful to refer to past years' evaluations when preparing new ones or when planning new objectives. If you find that the same recommendations are being made year after year the process of implementing and tracking recommendations to completion needs improvement.

Smaller Worksites. At smaller sites a written evaluation report may not be practical. However, it is important to set aside time to think about desired changes. The evaluation process already has involved considering what was done during the course of the year, talking to people, looking at the site's working conditions and reviewing available documents. Next, decide what you want to do differently and make sure that everyone understands what is expected.

SUMMARY

This chapter has defined a safety and health program evaluation. It has described what should be evaluated, who should do the evaluation and with what tools, how the evaluation should be conducted and how to use the results.

The following appendices offer additional examples, guidelines and instructions:

Appendix 12-1 provides an example of a self-evaluation checklist for small businesses. This can be used to perform a comprehensive evaluation of the safety and health program.

Appendix 12-2 is a step-by-step guide to using the three evaluation tools: documentation review, employee interviews and hazardous conditions review and analysis. These tools are used to assess each element and subsidiary component of a safety and health program.

Appendix 12-3 provides a sample evaluation instruction sheet that can be used to evaluate routine inspections when such inspections are part of your safety and health program.

By using this information to perform annual evaluations you will be able to compute your company's safety and health bottom line, just as you now can calculate your organization's financial bottom line. You will have the information needed to make knowledgeable and effective decisions promoting workplace safety and health.

APPENDIX 12-1

EXAMPLE OF A SELF-EVALUATION CHECKLIST FOR SMALL BUSINESSES

Instructions: Fill out the last five columns after judging the effectiveness of each part of your safety and health program. If the part of your program indicated in the first column is fully effective enter "YES" in the second column. If not fully effective enter "NO".

- **Explain the deficiencies in the "Comments/Improvements" column and list any specific, planned improvements.**
- **Indicate the persons responsible for these improvements in the next column.**
- **Enter the target date for these improvements.**
- **Finally, when the improvements are actually completed enter the completion date in the last column.**

ELEMENT I. MANAGEMENT LEADERSHIP AND EMPLOYEE INVOLVEMENT

INDICATORS	YES/ NO	COMMENTS IMPROVEMENTS	RESPONSIBLE PARTY	TARGET DATE	DATE COMPLETED
Policies and objectives are established and communicated to all employees					
Top management is visibly involved in safety and health					
Employees are involved in identifying and solving safety and health problems					
All safety and health responsibilities are clearly assigned					
Adequate authority and resources are provided to those with responsibility					
Managers, supervisors and employees are held accountable					
Program operations are reviewed at least annually to evaluate success in meeting goals and objectives and to prepare new objectives					

ELEMENT II. WORKSITE ANALYSIS

INDICATORS	YES\ NO	COMMENTS IMPROVEMENTS	RESPONSIBLE PARTY	TARGET DATE	DATE COMPLETED
A baseline comprehensive survey of hazards has been done or updated within the last three years					
Change analysis is done for every change of facility, equipment, process or material					
Job hazard analysis is done on an ongoing basis					
Self-inspections are conducted regularly by adequately trained supervisors in their work areas					
Broad, regular site inspections are conducted periodically by adequate trained personnel					
Employees know how and whom to notify about hazards, without fear of reprisal and receive timely and appropriate responses					
Accidents and near-miss incidents are investigated to identify all contributing causes and to prevent future occurrences					

ELEMENT II. WORKSITE ANALYSIS (CON'T)

INDICATORS	YES/ NO	COMMENTS IMPROVEMENTS	RESPONSIBLE PARTY	TARGET DATE	DATE COMPLETED
Reviews are done of injury and illness experience over a period of time long enough for patterns of potentially common causes to appear					

ELEMENT III. HAZARD PREVENTION AND CONTROL

INDICATORS	YES/ NO	COMMENTS IMPROVEMENTS	RESPONSIBLE PARTY	TARGET DATE	DATE COMPLETED
All identified hazards are prevented or controlled in the best feasible manner					
Safe work procedures based on job hazard analyses have been established					
Supervision reinforces safe work through positive feedback and training					
Enforcement of safe work procedures and safety and health rules is accomplished fairly and efficiently through a disciplinary system that all employees understand					
New or repeat hazards are identified and corrected in a timely manner					
The facility and equipment are regularly maintained to prevent hazardous breakdowns					
Arrangements have been made for occupational health specialists to provide medical services, including assistance in health problem identification					

ELEMENT III. HAZARD PREVENTION AND CONTROL (CON'T)

INDICATORS	YES/ NO	COMMENTS IMPROVEMENTS	RESPONSIBLE PARTY	TARGET DATE	DATE COMPLETED
First aid and CPR-trained employees are available on every shift					
Preparations have been made for all types of emergencies					
Exits, evacuation routes and emergency telephone numbers are prominently displayed					

ELEMENT IV. SAFETY AND HEALTH TRAINING

INDICATORS	YES/ NO	COMMENTS IMPROVEMENTS	RESPONSIBLE PARTY	TARGET DATE	DATE COMPLETED
Employees can explain how and why they do the job safely and healthfully					
Employees use all required PPE properly					
Employees can explain why PPE is used, how to use it and maintain it and what the limits of its protection are					
Supervisors can explain safety rules and procedures for hazard control, how they teach this to employees and how they enforce it					
Managers can explain their safety and health responsibilities					

SPECIAL OBJECTIVES (LIST AND EVALUATE INDIVIDUALLY)

INDICATORS	YES/ NO	COMMENTS IMPROVEMENTS	RESPONSIBLE PARTY	TARGET DATE	DATE COMPLETED

APPENDIX 12-2

FURTHER DESCRIPTION OF A SAFETY AND HEALTH PROGRAM ASSESSMENT

INTRODUCTION

There are three basic methods for assessing safety and health program effectiveness. This description will explain each of them. It also will provide more detailed information on how to use these tools to evaluate each element and subsidiary component of a safety and health program. The outlined information that begins on page 12-22 corresponds in format to pages 12-2 to 12-4.

The three basic methods for assessing safety and health program effectiveness are:

1. Checking documentation of activity;

2. Interviewing employees at all levels for knowledge, awareness and perceptions; and

3. Reviewing site conditions and, where hazards are found, finding the weaknesses in management systems that allowed the hazards to occur or to be "uncontrolled."

Some elements of the safety and health program are best assessed by using one of these methods. Others lend themselves to assessment by two or all three methods.

Documentation. Checking documentation is a standard audit technique. It is particularly useful for understanding whether the tracking of hazards to correct is effective. It can also be used to determine the quality of certain activities, such as self-inspections or routine hazard analysis.

Inspection records can tell the evaluator whether serious hazards are being found or whether the same hazards are being found repeatedly. If serious hazards are not being found and accidents keep occurring there may be a need to train inspectors to look for different hazards. If the same hazards are being found repeatedly the problem may be more complicated. Perhaps the hazards are not being corrected. If so, this would suggest a tracking problem or a problem in accountability for hazard correction.

If certain hazards recur repeatedly after being corrected, someone is not taking responsibility for keeping those hazards under control. Either the responsibility is not clear or those who are responsible are not being held accountable.

Employee Interviews. Talking to randomly selected employees at all levels will provide a good indication of the quality of employee training and of employee perceptions of the program. If safety and health training is effective employees will be able to tell you about the hazards they work with and how they protect themselves and others by keeping those hazards controlled. Every employee should also be able to say precisely what he or she is expected to do as part of the program. And all employees should know where to go in an emergency.

Employee perceptions can provide other useful information. An employee's opinion of how easy it is to report a hazard and get a response will tell you a lot about how well your hazard reporting system is working. If employees indicate that your system for enforcing safety and health rules and safe work practices is inconsistent or confusing you will know that the system needs improvement.

Interviews should not be limited to hourly employees. Much can be learned from talking with first-line supervisors. It is also helpful to query line managers about their understanding of their safety and health responsibilities.

Site Conditions and Root Causes of Hazards. Examining the conditions of the workplace can reveal existing hazards. But is can also provide information about the breakdown of those management systems meant to prevent or control these hazards.

Looking at conditions and practices is a well established technique for assessing the effectiveness of safety and health programs. For example, let's say that in areas where PPE is required you see large and understandable signs communicating this requirement and all employees -- with no exceptions -- wearing equipment properly. You have obtained valuable visual evidence that the PPE program is working.

Another way to obtain information about safety and health program management is through root analysis of observed hazards. This approach to hazards is much like the most sophisticated accident investigation techniques in which many contributing factors are located and corrected or controlled.

For example, let's say that during a review of conditions, you find a machine being operated without a guard on a pinch point. You should not limit your response to ensuring that a guard is installed. Asking a few questions can reveal a lot about the safety program's management systems. Why was the guard missing? If the operator says he did not know a guard was supposed to be on the machine, follow up with questions about the existence of safe work procedures and/or training.

If he says that the guard slows him down and that the supervisor knows he takes it off, ask questions about the enforcement of rules, accountability and the clarity of the worksite objective of putting safety and health first.

Let's say, however, that your insurance inspector or an OSHA inspector is the first person to notice the need for the guard. Or you first notice it when someone is hurt. A different lead-off question is appropriate. Has a comprehensive survey of the worksite been done by someone with enough expertise to recognize all potential and existing hazards?

Analyzing the root causes of hazards, while very helpful during a formal assessment, is a technique that also lends itself to everyday use. Attempt to analyze causes whenever hazards are spotted.

When evaluating each part of your worksite's safety and health program, use one or more of the above methods, as appropriate.

The remainder of this appendix will identify the components found in each element of a quality safety and health program and will describe useful ways to asses these components.

1. Assessing the Key Components of Management Leadership and Employee Involvement

- Worksite Policy on Safe and Healthful Working Conditions

  - Documentation. If there is a written policy, does it clearly declare the priority of worker safety and health over other organizational values, such as production.

  - Interviews. When asked, can employees at all levels express the worksite policy on worker safety and health?

    If the policy is written, can hourly employees tell you where they have seen it?
    Can employees at all levels explain the priority of worker safety and health over other organizational values, as the policy intends?

  - Site Conditions and Root Causes of Hazards. Have injuries occurred because employees at any level did not understand the importance of safety precautions in relation to other organizational values, such as production?

- **Goal and Objective for Worker Safety and Health**

  - **Documentation.** If there is a written goal for your safety and health program, is it updated annually?

    If there are written objectives, such as an annual plan to reach that goal, are they clearly stated?

    If managers and supervisors have written objectives, do these documents include objectives for the safety and health program?

  - **Interviews.** Do managers and supervisors have a clear idea of their objectives for worker safety and health?

    Do hourly employees understand the current objectives of the safety and health program?

  - **Site Conditions and Root Causes of Hazards**. (Only helpful in a general sense.)

- **Visible Top Management Leadership**

  - **Documentation**. Are there one or more written programs which involve top-level management in safety and health activities? For example, top management can receive and sign off on inspection reports either after each inspection or in a quarterly summary. These reports can then be posted for employees to see. Top management can provide "open door" times each week or each month for employees to come in to discuss safety and health concerns. Top management can reward the best safety suggestions each month or at other specified intervals.

  - **Interviews**. Can hourly employees describe how management officials are involved in safety and health activities?

- Do hourly employees perceive that managers and supervisors follow safety and health rules and work practices, such as wearing appropriate personal protective equipment?

- Site Conditions and Root Causes of Hazards. When employees are found not wearing required personal protective equipment or not following safe work practices, have any of them said that managers or supervisors also did not follow these rules?

- Employee Involvement

  - Documentation. Are there one or more written programs that provide for employee involvement in decisions affecting their safety and health?

    Is there documentation of these activities; for example, employee inspection reports, minutes of joint employee-management or employee committee meetings?

    Is there written documentation of any management response to employee safety and health program activities?

    Does the documentation indicate a genuine substance to employee activities?

  - Interviews. Are employees aware of ways they can be involved in decisions affecting their safety and health.

    Do employees appear to take pride in the achievements of the worksite safety and health program?

    Are employees comfortable answering questions about safety and health programs and conditions at the site?

    Do employees feel they have the support of management for their safety and health activities?

- Site Conditions and Root Causes of Hazards. (Not applicable.)

- Assignment of Responsibility

    - Documentation. Are responsibilities written out so that they can be clearly understood?

    - Interviews. Do employees understand their own responsibilities and those of others?

    - Site Conditions and Root Causes of Hazards. Was the hazard caused in part because no one was assigned the responsibility to control or prevent it?

      Was the hazard allowed to exist in part because someone in management did not have the clear responsibility to hold a lower-level manager or supervisor accountable for carrying out assigned responsibilities?

- Adequate Authority and Resources

    - Documentation. (Only generally applicable.)

    - Interviews. Do safety staff members or any other personnel with responsibilities for ensuring safe operation of production equipment have the authority to shut down that equipment or to order maintenance or parts?

      Do employees talk about not being able to get safety and health improvements because of cost?

      Do employees mention the need for more safety or health personnel or expert consultants?

    - Site Conditions and Root Causes of Hazards. Do recognized hazards go uncorrected because of lack of authority or resources?

      Do hazards go unrecognized because greater expertise is needed to diagnose them?

- **Accountability of Managers, Supervisors and Hourly Employees**

  - **Documentation. Do performance evaluations for all line managers and supervisors include specific criteria relating to safety and health protection?**

  - **Is there documented evidence of employees at all levels being held accountable for safety and health responsibilities, including safe work practices? Is accountability accomplished through either performance evaluations affecting pay and/or promotions or disciplinary actions?**

  - **Interviews. When you ask employees what happens to people who violate safety and health rules or safe work practices, do they indicate that rule breakers are clearly and consistently held accountable?**

    Do hourly employees indicate that supervisors and managers genuinely care about meeting safety and health responsibilities?

    When asked what happens when rules are broken, do hourly employees complain that supervisors and managers do not follow rules and never are disciplined for infractions?

  - **Site Conditions and Root Causes of Hazards. Are hazards occurring because employees, supervisors and/or managers are not being held accountable for their safety and health responsibilities?**

    Are identified hazards not being corrected because those persons assigned the responsibility are not being held accountable?

- **Evaluation of Program Operations**

  - **Documentation. Is there a written evaluation of each major part of the program, as identified in the OSHA Safety and Health Program Management Guidelines (54 CFR 3908, January 26, 1989)? Does this written evaluation list what is being done, assess the effectiveness of each program element against the goal and objectives and recommend changes as needed to make the program more effective or to try alternatives?**

- Interviews. Can employees, supervisors and/or managers tell you how the program is evaluated and revised each year?

- Site Conditions and Root Causes of Hazards. (Only generally applicable).

2. Assessing the Key Components of Worksite Analysis

- Comprehensive Surveys, Change Analysis, Routine Hazard Analysis

  - Documentation. Are there documents that provide comprehensive analysis of all potential safety and health hazards of the worksite?

    Are there documents that provide both the analysis of potential safety and health hazards for each new facility, equipment, material or process and the means for such hazards' elimination or control?

    Does documentation exist of the step-by-step analysis of the hazards in each part of each job, so that you can clearly discern the evolution of decisions on safe work procedures?

    If complicated processes exist, with a potential for catastrophic impact from an accident but low probability of such accident (as in nuclear power or chemical production), are there documents analyzing the potential hazards in each part of the processes and the means to prevent orcontrol them?

    If there are processes with a potential for catastrophic impact from an accident but low probability of an accident, have analyses such as "fault tree" or "what if" been documented to ensure enough back-up systems for worker protection in the event of multiple control failure?

  - Interviews. Do employees complain that new facilities, equipment, materials or processes are hazardous?

    Do any employees say they have been involved in job safety analysis or process review and are satisfied with the results?

Does the safety and health staff indicate ignorance of existing or potential hazards at the worksite?

Does the occupational nurse/doctor or other health care provider understand the potential occupational diseases and health effects in this worksite?

- Site Conditions and Root Causes of Hazards. Have hazards appeared where no one in management realized there was potential for their development?

  Where workers have faithfully followed job procedures, have accidents or near misses occurred because of hidden hazards?

  Have hazards been discovered in the design of new facilities, equipment, materials and processes after use has begun?

  Have accidents or near misses occurred when two or more failures in the hazard control system occurred at the same time, surprising everyone?

- Regular Site Safety and Health Inspections

  - Documentation. If inspection reports are written, do they show that inspections are done on a regular basis?

    Do the hazards found indicate good ability to recognize those hazards typical of this industry?

    Are hazards found during inspections tracked to complete correction?

    What is the relationship between hazards uncovered during inspections and those implicated in injuries or illness?

  - Interviews. Do employees indicate that they see inspections being conducted and that these inspections appear thorough?

  - Site Conditions and Root Causes of Hazards. Are the hazards discovered during accident investigations ones that should have b een recognized and corrected by the regular inspection process?

- **Employee Reports of Hazards**

  - **Documentation. Is the system for written reports being used frequently?**

    Are valid hazards that have been reported by employees tracked to complete correction?

    Are the responses timely and adequate?

  - **Interviews. Do employees know whom to contact and what to do if they see something they believe to be hazards to themselves or co-workers?**

    Do employees think that responses to their reports of h azards are timely and adequate?

    Do employees say that sometimes when they report a hazard they hear nothing further about it?

    Do any employees say that they or other workers are being harassed, officially or otherwise, for reporting hazards?

  - **Site Conditions and Root Causes of Hazards. When hazards are found, do employees ever say they have complained repeatedly but to no avail?**

    Are hazards ever found where employees could reasonable be expected to have previously recognized and reported them?

- **Accident and Near Miss Investigations**

  - **Documentation. Do accident investigation reports show a thorough analysis of causes, rather than a tendency automatically to blame the injured employees?**

    Are near misses, (property damage or close calls) investigated using the same techniques as accident investigations?

    Are hazards that are identified as contributing to accidents or near misses tracked to correction?

  - **Interviews. Do employees understand and accept the results of accident and near misses investigations?**

Do employees mention a tendency on management's part to blame the injured employee?

Do employees believe that all hazards contributing to accidents are corrected or controlled?

- **Site Conditions and Root Causes of Hazards. Are accidents sometimes caused at least partly by factors that might also have contributed to previous near misses that were not investigated or accidents that were too superficially investigated?**

- **Injury and Illness Pattern Analysis**

  - **Documentation. In addition to the required OSHA log, are careful records kept of first aid injuries and/or illnesses that might not immediately appear to be work-related?**

    Is there any periodic, written analysis of the patterns of near misses, injuries and/or illnesses over time, seeking previously unrecognized connections between them that indicate unrecognized hazards needing correction or control?

    Looking at the OSHA 200 log, and where applicable, first aid logs, are there patterns of illness or injury that should have been analyzed for previously undetected hazards?

    If there is an occupational nurse/doctor on the worksite, or if employees suffering from ordinary illness are encouraged to see a nearby health care provider, are the lists of those visits analyzed for clusters of illness that might be work-related?

  - **Interviews. Do employees mention illnesses or injuries that seem work-related to them but that have not been analyzed for previously undetected hazards?**

  - **Site Conditions and Root Causes of Hazards. (Not generally applicable.)**

3. Assessing the Key Components of Hazard Prevention and Control.

- Appropriate Use of Engineering Controls, Work Practices, Personal Protective Equipment and Administrative Controls

  - Documentation. If there are documented comprehensive surveys are they accompanied by a plan for systematic prevention or control of hazards found?

    If there is a written plan does it show that the best method of hazard protection was chosen?

    Are there written safe work procedures?

    If respirators are used, is there a written respirator program?

  - Interviews. Do employees say they have been trained in and have ready access to reliable, safe work procedures?

    Do employees say they have difficulty accomplishing their work because of unwieldy controls meant to protect them?

    Do employees ever mention personal protective equipment, work procedures or engineering controls as interfering with their ability to work safely?

    Do employees who use PPE understand why they use it and how to maintain it?

    Do employees who use PPE indicate that the rules for PPE use are consistently and fairly enforced?

    Do employees indicate that safe work procedures are fairly and consistently enforced?

  - Site Conditions and Root Causes of Hazards. Do you ever find that controls meant to protect workers are actually putting them at risk or not providing enough protection?

    Are employees engaging in unsafe practices or creating unsafe conditions because rules and work practices are not fairly and consistently enforced?

Are employees in areas designated for PPE wearing it properly, with no exceptions?

Are hazards that could feasibly be controlled through improved design being inadequately controlled by other means?

- Facility and Equipment Preventive Maintenance

  - Documentation. Is there a preventive maintenance schedule that provides for timely maintenance of the facilities and equipment?

    Is there a written or computerized record of performed maintenance that shows the schedule has been followed?

    Do maintenance request records show a pattern of certain facilities or equipment needing repair or breaking down before a maintenance was scheduled or actually performed?

    Do any accident/incident investigations list facility or equipment breakdown as a major cause?

  - Interviews. Do employees mention difficulty with improperly functioning equipment or facilities in poor repair?

    Do maintenance employees believe that the preventive maintenance system is working well?

    Do employees believe that hazard controls needing maintenance are properly cared for?

  - Site Conditions and Root Causes of Hazards. Is poor maintenance a frequent source of hazards?

    Are hazard controls in good working order?

    Does equipment appear to be in good working order?

- Emergency Planning and Preparation

  - Documentation. Are there clearly written procedures for every likely emergency, with clear evacuation routes? Can employees tell you exactly what they are supposed to do?

- Interviews. When asked about any kind of likely emergency, can employees tell you exactly what they are supposed to do?

- Site Conditions and Root Causes of Hazards. Have hazards occurred during actual or simulated emergencies due to confusion about what to do?

  In larger worksites, are emergency evacuation routes clearly marked?

  Are emergency telephone numbers and fire alarms easy to find?

- Establishing a Medical Program

  - Documentation. Are good clear records kept of medical testing and assistance?

  - Interviews. Do employees say that test results were explained to them?

    Do employees feel that more first aid or CPR-trained personnel should be available?

    Are employees satisfied with the medical arrangements provided at the site or elsewhere?

    Does the occupational health care provider understand the potential hazards of the worksite, so that occupational illness symptoms can be recognized?

  - Site Conditions and Root Causes of Hazards. Have further injuries or worsening of injuries occurred because proper medical assistance (including trained first aid and CPR providers) was not readily available?

    Have occupational illnesses possibly gone undetected because no one with occupational health specialty training reviewed employee symptoms as part of the medical program?

4. Assessing the Key Components of Safety and Health Training.

- **Ensuring that all Employees Understand Hazards**

  - **<u>Documentation</u>. Does the written training program include complete training for every employee in emergency procedures and in all potential hazards to which employees may be exposed?**

    Do training records show that every employee received the planned training?

    Do the written evaluations of training indicate that the training was successful and that the employees learned what was intended?

  - **<u>Interviews</u>. Can employees tell you what hazards they are exposed to, why those hazards are a threat and how they can help protect themselves and others?**

    If PPE is used, can employees explain why they use it and how to use and maintain it properly?

    Can employees tell you precisely what they are supposed to do and where they are supposed to go in every kind of emergency likely to occur at your worksite?

    Do employees feel that health and safety training is adequate?

  - **<u>Site Conditions and Root Causes of Hazards</u>. Have employees been hurt or made ill by hazards of which they were completely unaware, or whose dangers they did not understand or from which they did not know how to protect themselves?**

    Have employees or rescue workers ever been endangered by employees not knowing what to do or where to go in a given emergency situation?

    Are there hazards in the workplace that exist, at least in p art, because one or more employees have not received adequate hazard control training? Are there any instances of employees not wearing required PPE properly because they have not received proper training?

- **Ensuring that Supervisors Understand Their Responsibilities**

    - **Documentation. Do training records indicate that all supervisors have been trained in their responsibilities to analyze work under their supervision for unrecognized hazards; to maintain physical protections; to reinforce employee training through performance feedback; and, where necessary, to enforce safe work procedures and safety and health rules?**

    - **Interviews. Are supervisors aware of their responsibilities?**

      Do employees say that supervisors are carrying out these duties?

    - **Site Conditions and Root Causes. Has a supervisor's lack of understand of safety and health responsibilities played a part in creating hazardous activities or conditions?**

- **Ensuring that Managers Understand Their Safety and Health Responsibilities**

    - **Documentation. Do training plans for managers include training in safety and health responsibilities? Do records indicate that all line managers have received this training?**

    - **Interviews. Do employees indicate that managers know and carry out their safety and health responsibilities?**

    - **Site Conditions and Root Causes of Hazards. Has an incomplete or inaccurate understanding by management of its safety and health responsibilities played a part in the creation of hazardous activities or conditions?**

APPENDIX 12-3

SAMPLE FROM AN EVALUATION INSTRUCTION

The questions asked in this sample instruction relate to the section of the evaluation dealing with routine inspections. They are similar, however, to those that should be asked for every element in your safety and health program.

Write an evaluation report by responding to the following questions and instructions. Use complete sentences. Where appropriate, one sentence can cover more than one question. Your answers should reflect completed judgments. Avoid using terms that suggest incomplete judgments, such as "appears," "apparently" and "seems."

Section 2. Routine Inspections

1. List any established objectives that involve routine inspections.

2. If any specific objectives were set for inspections were they effectively met? Describe.

3. Are inspections following set procedures? If not, describe how they differ and how frequently this difference occurs.

4. If procedures are not being followed, discuss the reasons and whether the alternative activity meets the objective seen for inspections.

5. Has inspection activity contributed to identification and control of hazards and potential hazards? Describe.

6. If not otherwise covered above, please answer the following and provide examples.

a. Are inspections revealing hazards escaping their controls? Examples: guards removed from machines, housekeeping problems, employees failing to follow established safety procedures. If so, be sure to deal with this topic in the evaluation of hazard prevention and control.1

b. Are inspections revealing new hazards that either did not exist or were not identified previously? If so, be sure to deal with this topic under the evaluation comprehensive surveys, change analysis or routine hazard analysis.2

c. Are inspections revealing repeated instances of the same problem? If so, is the problem going uncorrected or is it recurring after being corrected? If the former, be sure to deal with the problem under the evaluation of tracking of hazard correction, accountability or both. If the latter, be sure to address the problem under hazard prevention and control.

7. List any recommendations for changes in routine inspection activity needed for next year. Make sure that the recommended logically reflect the conclusions made above.

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1 For information about implementing programs for hazard prevention and control, see Chapter 7

2 For information about comprehensive surveys, change analysis and routine hazard analysis, see Chapter 6