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ABSTRACT

Designed as an aid for establishing and strengthening occupational safety and health programs on college and university campuses, this administrator guide is divided into four chapters. The first chapter defines and gives background information on the Occupational Safety and Health Act (OSHA). In addition, it presents a discussion of what the OSHA standards cover and how they are enforced. Focusing on organizing and staffing, chapter 2 discusses formulating program objectives, obtaining administrative support, organizing the program, staffing the program, using committees, generating employee cooperation, and obtaining adequate funding. Chapter 3 focuses on the following occupational safety and health program functions: inspection and abatement procedures; writing rules and regulations; safety and health training; recordkeeping and reporting; accident, injury, and illness investigation and reporting; and monitoring and evaluation of program activities. The final section provides sources of information for persons establishing a campus occupational safety and health program. Included are lists of associations and organizations, private companies, clearinghouses, government agencies, and publications. (LRA)

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OCCUPATIONAL SAFETY AND HEALTH PROGRAM GUIDELINES FOR COLLEGES AND UNIVERSITIES

An Administrative Resource Manual

Frank W. Godbey
Loren L. Hatch

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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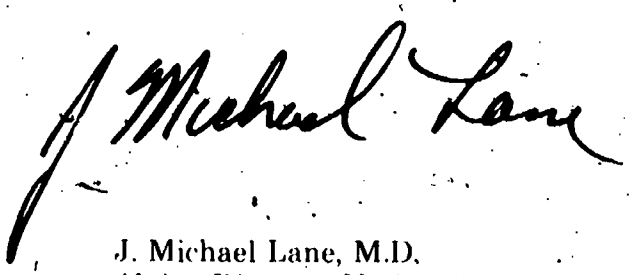
FOREWORD

America's colleges and universities represent our highest principles and ideals, and this image should be reflected in their concern for the well-being of faculty and staff. Such institutions also provide leadership in the community—leadership that extends beyond academic areas. This leadership role can be continued in the field of health and safety through the establishment of occupational safety and health programs, which may become models on which local businesses and institutions can base their own programs.

The National Institute for Occupational Safety and Health offers the information in this manual as an aid in establishing and strengthening occupational safety and health programs on college and university campuses throughout the nation. Implementation of the approach developed here will promote a safer and more healthful environment for the faculty and staff of these schools.



J. Michael Lane, M.D.
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Safety and Health

PREFACE

WHAT'S SO IMPORTANT ABOUT AN OCCUPATIONAL SAFETY AND HEALTH PROGRAM?

First, and most significantly, it's important to your employees. The goal of any occupational safety and health program is to reduce the number and severity of job-related injuries and illnesses. This, in turn, reduces the physical, psychological, and financial burden of such accidents on these employees.

A second advantage to the establishment of a formal OSH program is financial. Insurance premiums, including malpractice insurance if your school has medical personnel, are among the direct costs that may be reduced. These premiums are often based on accident rates and are lowered as the frequency and number of claims drop. Other direct costs affected by an OSH program are worker's compensation, Occupational Safety and Health Administration (OSHA) and other agency fines, repair costs (particularly if preventive maintenance is part of the program), and court and investigation costs and lawyers' fees. Academic institutions are potentially liable in case of an accident and can be sued for negligence.

Indirect costs may also be reduced. A formal OSH program can centralize the efforts and eliminate duplicate efforts of many persons, both faculty and staff, and can free more of their time for their specific professional tasks. Productivity can increase this way and also through a reduction of lost time from breakdown of equipment not regularly maintained. Other indirect costs, such as equipment replacement, deferred maintenance, and training costs, may show similar reductions as a result of this program.

In the same way that a manufacturing plant, a service station, or a construction contractor is obliged by law to meet certain minimum requirements for protecting employees' safety and health, so too are colleges and universities. All private institutions and many public ones are covered by either a state OSH plan or by the federal Occupational Safety and Health Act (Act). Even if your school is not covered by law, there may still be OSHA inspections on campus of private activities (food commissaries, contractors' facilities, etc.). The institution may become inadvertently involved if violations are found. Because the OSH program outlined in this publication is

based in part on the legal standards, such a program can help protect the institution.

Colleges and universities are subject to regulation from many additional sources: local and state fire safety laws, building and construction codes, and sanitation requirements; the U.S. Department of Transportation's rules for the shipment of chemicals; the Nuclear Regulatory Commission's requirements for the use of ionizing radiation. Compliance with these and other regulations can be accomplished through a comprehensive OSH program. The complexity of these legal requirements alone underscores the need for an experienced and trained OSH Program Director.

There is no avoiding the fact that an occupational safety and health program requires an investment of time and money—but the only way to take full advantage of the many benefits cited here is to establish a formal OSH program, with the support of top administrators and with staff specifically assigned to defined OSH activities. Such a program can eliminate the causes of many OSH problems and emergencies and, with that, eliminate the serious and far-reaching consequences of these incidents.

ABSTRACT

This book presents the basics for establishing a comprehensive occupational safety and health (OSH) program in a college or university, the purpose of which is to reduce the number and severity of job-related injuries and illnesses. It is intended to be most relevant to those campuses with a limited OSH program or with no formal program at all. On campuses where a program already exists, the manual can provide suggestions for supplementary activities.

The philosophy behind the need for an OSH program, the considerations necessary for organizing a program, and the details of administrative and financial support necessary for its existence are presented. An extensive list of resource materials and organizations is also provided.

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EXECUTIVE SUMMARY

The Occupational Safety and Health Act (Act) has had a tremendous impact on safety and health practices. This Act, passed in 1970, charges all employers whose business affects interstate commerce with the responsibility for their employees' occupational safety and health. It requires that the employer provide each employee with a place of employment that is free from recognized hazards and that is in compliance with the standards established under the Act. The Act covers all private higher education institutions and many public ones as well. As more states receive approval for their occupational safety and health (OSH) plans, public institutions in those states will be covered.

An OSH program is an organized program devised to correct and prevent safety and health hazards in the workplace. Through the use of this formal program, it is possible to identify, evaluate, and control problem areas, be they unsafe acts or practices, unsafe conditions, or an unhealthful work environment. A formal OSH program for colleges and universities is one that:

- is recognized by the institution;
- is supported by top-level administration;
- has as its overall program objective the concept of reducing the number and severity of work-related injuries and illnesses;
- has a program of planned activities that will achieve program objectives; and
- has a specific person responsible and accountable for the program.

This manual was developed by the National Institute for Occupational Safety and Health (NIOSH) to provide the basic information needed to establish an OSH program in colleges and universities. With the use of this manual, campus safety officers, environmental hazard officers, biohazard safety officers, and others responsible for the occupational safety and health of all employees can assess their OSH needs and plan a comprehensive program within the administrative structures of their institutions. The procedures described here are guidelines based on accepted OSH procedures, Occupational Safety and Health Administration (OSHA) regulations, and other accepted standards that apply to most educational institutions.

This is a "how to" manual; some theory is presented, but the major thrust is on practicality. Specific ideas and guidelines are offered for the program area components: organization and staffing, OSH program functions, and sources of information. Although, at all times, the ideal situation or solution is considered, the manual always attempts to indicate what can be done, realistically, with limited resources.

The concept of an OSH program is introduced by explaining the importance of having an effective OSH program on campus—a program that goes beyond identifying hazards for compliance or examining the causes of these hazards.

Because of the effect of OSHA legislation on such programs, this legislation and the impact of OSHA regulations on colleges and universities is reviewed.

The administrative procedures to be considered in developing an OSH program are examined.

The OSH program must be recognized by the institution. The manual explains how top level support is needed and obtained to help the program compete for resources, exert its authority, and initiate safety and health activities.

The OSH program must be supported by the institution's top-level administrators. A policy statement written by the institution's president should be published and distributed. The policy statement should receive the endorsement of the governing board. The status and influence of the person acting as the program's administrator will also reflect administration support. This person, to be most effective, should be at the vice-presidential or vice-chancellor level. The program administrator's influence affects both the importance of the program as perceived by other employees and the acceptance of program directives by these people.

The OSH program must have planned activities that will lead toward achieving defined program objectives. These objectives take into account the specific needs and problems of the institution as part of the overall goal of any OSH program—that of reducing the number and severity of occupational illnesses and injuries. Specific, measurable objectives should be developed; each of these objectives can generate many program activities. The objectives provide a framework within which to implement, monitor, and evaluate the program activities.

The OSH program must have a Program Director who is responsible and accountable for the program. Although the Program Director's position should be full-time, some smaller institutions may be able to afford only a part-time assignment for this work. Whether full- or part-time, the Program Director must be selected with care. This person is charged with responsibilities that call for awareness of safety and health regulations, an understanding of OSH princi-

ples, and good administrative skills in order to plan the program and supervise and evaluate its activities. Since the Program Director's position is usually one of guidance and counseling, rather than enforcement, the person selected must be able to work with both campus officials and employees and gain their cooperation in making the OSH program successful. When the Program Director is the only staff member, others within the academic community will be available for various tasks or outside consultants can be employed.

To be effective, every OSH program should perform certain basic functions:

- conduct on-site inspections,
- correct hazardous conditions,
- develop written rules and regulations,
- provide training to employees,
- investigate accidents and occupational illnesses,
- keep illness/injury records, and
- monitor and evaluate program performance.

Based on the experience of OSH professionals, these are the program activities needed to identify potential hazards, inform employees of proper OSH procedures, record incidents, and examine the results of the program's efforts.

To aid in establishing and maintaining an effective OSH program, a number of sources of information for help are offered. Particularly stressed are those sources that provide both administrative and technical assistance specifically applicable to universities and colleges. Private companies, governmental agencies, and publications that can provide needed assistance are listed.

A glossary completes this manual.

CHAPTER I. INTRODUCTION

Background

Because the Occupational Safety and Health Act (Act) charges employers whose businesses affect interstate commerce with the responsibility for their employees occupational safety and health, private institutions of higher learning and many public ones as well are covered by the Act.

This manual was developed by the National Institute for Occupational Safety and Health (NIOSH) to provide the assistance needed to establish an occupational safety and health (OSH) program in colleges and universities—a program designed to reduce the number and severity of job-related injuries and illnesses.

An OSH program is developed not just to be in compliance with Occupational Safety and Health Administration (OSHA) regulations and with state OSH regulations, but to create a safe and healthful work environment. Because this can only be done by going beyond the hazard to eliminate its underlying cause, this manual not only discusses ways to establish an OSH program that will identify and correct hazards, it also describes the need for developing sound OSH procedures and controls, and for properly training and motivating employees.

The trend on campuses has properly been toward developing safety and health programs that take into account employees, students, and visitors. The Act, however, includes only employees, and our emphasis here is on the employees and their occupational safety and health status. A comprehensive program aimed at the safety and health of employees can easily be extended to cover both students and visitors. The term "employee" encompasses all persons who work on the campus, either full- or part-time, and who are paid for their work as employees.

Institutions of higher education include small vocational or liberal arts schools as well as major universities. A small liberal arts school may have relatively few major hazard areas when compared with those at a large state university with numerous laboratories, a medical school, and an agricultural department. Because this manual must encompass the variety of potential hazards on any

campus, only the major elements needed for an effective OSH program are covered; other sources for a more in-depth examination are referenced.

Institutions vary not only in number and type of hazards, but also in their level of sophistication in dealing with occupational safety and health matters. To obtain a better understanding of OSH practices on campus, 60 schools, representative of the size and variety of educational institutions throughout the United States, were surveyed by the use of a contract (CDC Contract No. 210-75-0004). A preliminary OSH program was developed and eight educational institutions cooperated in a preliminary validation of this material. From this survey, we learned how OSH programs are currently structured on campuses and the depth of expertise that can be found within these programs. The survey data cannot be projected to show national estimates and will not be reported, but it did confirm the range of sophistication and the scope of OSH programs existing among these institutions:

- most institutions with a student enrollment less than 5,000 have no formal program;
- many of those with 5,000 to 15,000 also have no formal program;
- those with 15,000 or more generally do have an OSH program.

Even so, institutions reporting that they had a formal program missed many essential OSH elements in their program coverage.

Because the schools are so diverse and their programs vary, our focus is on those campuses with a limited OSH program or those with no formal program at all. These are the institutions most in need of basic information in developing or enlarging their OSH program. OSH personnel in the larger schools will also find some of this information helpful. Because many persons responsible for occupational safety and health on the campuses may not have a strong technical background in many OSH areas, important technical material is included in as nontechnical a manner as possible to make it relevant to their responsibilities. A glossary is included to aid in understanding some of the specialized terms used here.

The Occupational Safety and Health Act

Because the Occupational Safety and Health Act (Act) covers all private institutions and many public ones, university and college administrators and OSH personnel must be familiar with its provisions.

What the Act is and Who Must Comply

The Act requires that employers provide workplaces free from

recognized hazards that are causing or are likely to cause death or serious physical harm and comply with the occupational safety and health standards promulgated under the Act. The first of these standards appeared in the Federal Register during May 1971, and updates are issued periodically.

Although the OSH standards are based on federal legislation and involve federal agencies, states are permitted by the Act to develop their own plans for establishing and enforcing OSH standards. When OSHA approves a state plan establishing standards and an enforcement mechanism "at least as effective as" that of the federal government, the federal statute is superseded and inspection and compliance procedures are undertaken at the state level. In most states, the occupational safety and health standards consist primarily of the federal OSHA standards together with any existing or new state standards covering exposures not covered by the federal OSHA standards.

The Act and its regulations apply to employers, e.g., any person hiring one or more employees engaged in a business affecting commerce. If any tools, equipment, materials, or devices used on a job were manufactured in another state, the business is one "affecting commerce." This means that virtually every employer in every business or industry is covered by the Act.

Coverage of Institutions of Higher Education

Private colleges and universities are categorized as employers affecting commerce and, thus, are subject to federal OSH requirements unless they are located in states with approved OSH plans. In this latter case, they come under state jurisdiction. Employees of a state university or college, however, are categorized as public employees; as such, their employers are exempt from federal enforcement of the Act. Therefore public institutions located where state plans have not been approved are not subject to any direct safety and health regulations under the Act. The institutions are, however, subject to state law and to public pressure to conform and may be liable for harm that occurs if they have deviated from recognized OSH standards. Where state OSH plans are approved,* public institutions are covered by the state regulations.

Federal Organizations Created by the Act

To carry out the provisions of the Act, three new Federal organizations were created. One of these is the Occupational Safety and Health Administration (OSHA), part of the U.S. Department of Labor. OSHA is responsible for developing standards, inspecting

*A program is underway that will allow states without an approved OSH plan to enforce an occupational safety and health program for their public employees. (See Federal Register, April 6, 1976.)

worksites, and issuing citations and penalties for violations. It also is involved in short-term training of personnel engaged in OSH work and in collecting work injury and illness data.

Another organization created by the Act is the National Institute for Occupational Safety and Health (NIOSH), part of the U.S. Department of Health, Education, and Welfare. Its responsibilities fall within the general area of research. It is charged with developing the criteria on which to base safety and health standards. NIOSH recommends safe levels of exposure, outlines ways of protecting workers, and provides expert guidance to OSHA in the form of criteria documents that contain detailed scientific information about specific industrial health hazards. NIOSH also provides technical assistance to various institutions, at all levels, so they can develop new occupational safety and health programs or improve existing ones. Although NIOSH has the authority to make visits and to question employers and employees, this is generally done only in connection with special research studies or surveys and in response to requests from employers or employees to determine whether any substance found in the place of employment has potentially toxic effects.

A third group given responsibilities under the Act is the OSH Review Commission, an independent federal agency whose members are appointed by the President. This Commission decides disputes between an employer or employee and the Secretary of Labor.

In those states having an approved state OSH plan, the designated state agency (normally the labor agency) or agencies have the responsibility for administering and enforcing their OSH programs, a responsibility very similar to that of the U.S. Department of Labor.

What the Standards Cover

The present OSHA standards are, for the most part, familiar ones, since they were established from then-existing federal standards (e.g., Walsh-Healey Act) and from consensus standards developed by the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA). The Act provided that these standards could be adopted during the 2-year period after the Act's passage without public hearing. At the present time, however, proposed changes in and additions to rules, regulations, and standards must be published in the Federal Register with time allowed for public review and comment. Public hearings also must be held if requested or if determined beneficial by OSHA. OSHA may, if necessary, promulgate an emergency standard to take effect immediately.

The standards are very broad in scope. Some set requirements for equipment and materials and their use (e.g., protective equipment, power tools, compressed gas and air machinery, walking and work-

ing surfaces). Other standards refer to procedures for equipment handling, first aid, fire protection, sanitation, and general environmental controls. There are also requirements for various administrative functions such as recordkeeping, inspections, and training.

The standards are detailed; not all standards apply to every institution and changes in the standards are made frequently. Because reading and understanding them is a specialized task, to ensure compliance, each institution must assign someone to become thoroughly familiar with the standards and determine which ones are applicable. As a further precaution, the Federal Register or an update service should be consulted regularly to keep current with changes.

How the Standards Are Enforced

U.S. Department of Labor compliance officers and state compliance officers may enter, with the owner's permission or with a search warrant, any worksite covered by the Act. They may inspect the premises and all pertinent conditions, structures, machines, apparatus, devices, equipment, and materials. Representatives of both the employer and the employees must be given an opportunity to be present during the inspection. In campus situations, it would be normal for someone having responsibility for safety and health programs—such as the executive vice president, the business officer, or the Program Director—to accompany the compliance officer as the employer representative. The employee representative should be selected by the union, if one exists. Where there is no authorized employee representative, the compliance officer must consult with a reasonable number of employees concerning the occupational safety and health of their workplaces.

If, during an inspection or investigation, the violation of a standard or regulation is found, a written citation describing the nature of the violation and indicating a reasonable time for fixing it will be issued promptly. These citations must be prominently posted at or near the place where the violation occurred.

Any employee who believes that a violation of a safety or health standard or an imminent danger exists may request an inspection by sending a written, signed notice to the Department of Labor or the state agency. Notice may be given by telephone if the suspected violation is likely to cause immediate injury or illness. If the complaint provides reasonable grounds for concluding that a violation or danger exists, an inspection will be made. The identity of the complainant can be withheld from the employer if requested by the complainant.

No person may be discharged or discriminated against because of filing a complaint, testifying, or otherwise helping to institute any

proceeding under the Act. Any person who feels discriminated against may file a complaint with the Secretary of Labor, who must investigate the matter and bring appropriate corrective action in the U.S. District Court.

Four types of violations are defined:

1. Imminent danger violations—existing dangers that could reasonably be expected to cause death or serious physical harm.
2. Serious violations—existing dangers that probably could be expected to cause death or serious physical harm.
3. Nonserious violations—unsafe existing conditions or acts that probably would not cause death or serious physical harm but would have a direct or immediate relationship to the safety and health of employees.
4. De minimis violations—conditions or acts that are prohibited by OSHA standards, but have no direct or immediate relationship to safety or health (contact the local or regional OSHA office for more information about such violations).

Two other special categories of violations are (1) willful violations—those committed intentionally or those in which the employer makes no reasonable effort to eliminate a known hazardous condition, and (2) repeated violations—those occurring when the employer has violated a given standard a second time.

The penalties for violations of safety and health standards can be severe. For example, willful or repeated violations may be assessed at up to $10,000 for each violation; and a willful violation that causes the death of an employee can carry a prison term of up to 6 months for a first and up to 1 year for a second conviction. Citations for serious violations call for mandatory fines of up to $1,000 per violation. Failure to correct violations within a period of abatement may be assessed at $1,000 for each day each violation continues.

In determining penalties for citations, a distinction is made between serious and other violations. Penalties must be proposed for serious violations, but need not be for nonserious ones.

Within a short time after issuance of a citation for a violation, the employer will be notified by certified mail of the penalty the government proposes to assess. If the employer wishes to contest the citation or penalty, the institution must notify, in writing, the OSHA area office or the state agency that issued the citation within 15 days after receiving the notice. The director of the area office must then notify the Occupational Safety and Health Review Commission, and the Commission must afford an opportunity for a hearing. The Commission will then issue orders affirming, modifying, or nullifying the citation or proposed penalty. Commission orders may be appealed to the United States Court of Appeals within 60 days.

Informal hearings may be arranged with officials of the area or regional OSHA office or the state enforcement agency to discuss citations.

If a citation or penalty is contested, the burden of proof is with the Department of Labor. It must prove that a violation occurred and justify its proposed penalty and abatement period.

CHAPTER II. ORGANIZATION AND STAFFING

Campus OSH hazards can be controlled effectively through an organized program that encompasses correction *and* prevention of hazards.

To be considered a formal "program," as the term is used in this manual, an OSH effort must exhibit certain characteristics. It must be recognized by the institution, and it must be supported by the top level administration (preferably including the governing board) of the institution. Without this recognition and support, it cannot compete for resources, exert authority, or initiate activities for the institution as a whole. To have a program, some planned activities must occur that lead toward defined program objectives. A program engenders support by virtue of what it accomplishes. Finally, a specific person must be responsible and accountable for the program. Program objectives can best be achieved by proper direction and coordination of program activities. All of these criteria are included in what this manual refers to as a formal OSH program.

This chapter discusses what must be considered in the development of a formal OSH program and what must be accomplished to organize and staff an effective program.

Formulating Program Objectives

A program is an effort directed at achieving an objective. Thus, one of the first steps in setting up a program should be to define exactly what the program will achieve. The administration must make specific decisions in advance regarding what they intend to do and how they plan to carry it out. This can be called the planning process.

During the planning process, clear and measurable objectives should be developed to provide a framework within which to implement, monitor, and evaluate program activities. These objectives initially are formulated by program planners and administrators. Objectives also provide a basis for developing the program budget so that program resources are used efficiently.

The overall goal of any OSH program is "to improve the safety and health of the work environment." In more functional terms, this

goal can be restated: "to reduce the number and severity of occupational illnesses and injuries." Although all OSH program activities are aimed at achieving this goal, such a goal is too general to use in organizing a program. To provide a better framework, specific, measurable objectives should be developed. Well-formulated objectives provide the foundation for organizing activities, allocating staff and funds, monitoring performance, assessing program effectiveness, and communicating information about the program to others.

An objective is a clear, specific statement of a measurable result that is to be accomplished within a specified period of time. It is a benchmark along the path to achievement of the goal. If the program achieves a desired objective, theoretically, the program has made progress toward its overall goal.

Many different objectives could be pursued in the course of achieving the goal. Because program staff and other resources are limited, assess the current situation before deciding which course of action would bring about the greatest progress toward the goal, given the available resources. For instance, if the largest number of occupational illnesses and injuries occurs in laboratories, perhaps the program should allocate extra resources to eliminate hazards, upgrade safety equipment, and train personnel in the laboratories.

One way to begin formulating objectives for an OSH program is to consider the basic functions that are part of an effective OSH program. These functions, outlined below, are discussed in detail in Chapter III:

- conducting on-site inspections to uncover hazards,
- correcting or controlling these hazards,
- developing written rules and regulations,
- providing safety and health training,
- investigating accidents,
- maintaining illness and injury records, and
- monitoring and evaluating the program's performance against its objectives.

The following are examples of objectives that could be formulated for an OSH program:

- To train all supervisors in the use of an internal injury and illness reporting system by June 30, 1979.
- To distribute general OSH rules and regulations to all employees by January 1, 1979.

Each of these objectives can generate many program activities. For instance, the objective "To distribute general OSH rules and regulations to all employees by January 1, 1979" involves a number of program activities, including:

- researching the topics to be covered;
- drafting the rules and regulations;
- having the rules and regulations reviewed by the OSH program staff, the administration, safety committees, employee unions, and any other appropriate groups or individuals;
- rewriting the rules and regulations to incorporate reviewers' suggestions;
- distributing copies to all employees through normal campus channels.

Before the program becomes operational, program objectives usually are developed by the Program Director and staff. These objectives are then reviewed, modified, and approved by administrative officials or safety and health committees.

The formulation of objectives is a never-ending process, starting with the first program proposal. The objectives can be revised at the beginning of each budget cycle, and interim objectives also may be created within each budget cycle. Some program efforts may require multi-year plans to reflect what will be accomplished in 2 to 5 years. When multi-year objectives are formulated, the time required to complete these objectives should be clearly specified. The precision with which annual objectives are stated must be even clearer and more concise. Multi-year objectives usually are reviewed periodically and require revisions at the end of each year.

Obtaining Administrative Support

Obtaining and publicizing the administration's endorsement of the OSH program is important for two reasons. First, without the actual commitment of top administration, the program will be unable to compete with other endorsed programs for a share of the institution's resources. Second, without the visibility of top administration support, the program will likely be unable to enlist the cooperation of other members of the institution behind the OSH effort.

The administration's support for an OSH program may be based on various interests: the financial advantages of OSH, ethical responsibilities to employees and students, compliance with OSHA and other legislated directives, or taking a position of leadership within the community. Whatever the motivation, it is important that the institution's highest authority visibly endorse the OSH program, i.e., the governing board of the college or university.

When this endorsement is obtained, the institution's president usually issues a brief policy statement indicating the administration's endorsement of, and general expectations for, the OSH program, with delegation of responsibility for the program. Such policy statements are usually quite brief as they are mainly statements of endorsement. A sufficiently basic and general statement allows

greater flexibility to make program changes without going through the governing board for approval.

A more detailed set of policies and procedures for developing the program can then be approved by administrative authorities within the college or university, the council of president and vice-presidents, or other central administrative group. Exhibit 1 is an example of a more detailed procedures statement. Such a statement might well be found in the front of the employee safety and health manual.

Exhibit 1

OSH PROGRAM PROCEDURES STATEMENT

TO: All Central State Employees

FROM: Office of the President

RE: Occupational Safety and Health Program

PURPOSE: The purpose of this program, is to promote, create, and maintain a safe and healthful campus environment. It is my intention that various assigned activities and responsibilities be carried out and receive the full support and cooperation of all Central State employees. The various program activities are assigned as follows:

I. A comprehensive occupational safety and health (OSH) organization for the campus is hereby established.
   A. Mr. Ralph Finley is appointed Occupational Safety and Health Program Director and is responsible for various duties of the office including:
      1. The development of an OSH program for the campus.
      2. Compilation of the Federal, state, and local OSH regulations pertaining to this campus.
      3. Regular inspections of facilities for hazards and potential hazards.
      4. Development of procedures for reporting, reviewing, and analyzing all accidents.
      5. Development of departmental safety and health organizations.
      6. Recommendations of corrective action to appropriate offices.
   B. A functional Occupational Safety and Health Advisory Committee is hereby appointed.
      1. Membership will include the following:
         Administrative Vice President
         Insurance Manager
         Director, Health Services

Physical Plant Director
Occupational Safety and Health Program Director
Legal Counsel
Superintendent, Buildings and Grounds
Faculty Staff and Student Representatives
Labor Union Representative(s)
Student Employee Representatives

2. Meetings of the Committee will be held regularly. Findings and recommendations will be transmitted promptly to the President.
3. Officers shall be selected from the membership to serve for 1 year. The Program Director will be an ex-officio permanent member.

C. Accident prevention and safety and health discussions will be conducted with departments and staff.

D. An encompassing OSH orientation will be encouraged for the total campus.

II. An effective program for accident and occupational illness investigation and prevention will be promoted.

A. All work-related accidents and occupational illnesses will be recorded and investigated.

B. Accidents and occupational illnesses will be reviewed to determine patterns, causes, and effects.

C. Uniform detailed procedures for reporting all school-related accidents, illnesses, and injuries will be developed.

III. Guidelines for the training and placement of campus personnel will be developed.

A. Minimum physical requirements will be determined for faculty and staff based on skills and physical capabilities needed; these requirements will be included in the job description.

B. Physical examinations, as may be required, will be given to all new faculty and staff by a licensed physician.

C. Periodic physical examinations for persons with chronic conditions and following disabling injuries and illnesses will be required. (Physician must certify when a person is able to return to duty.)

D. Persons working with certain hazardous substances will be monitored as necessary.

E. Accident prevention information and rules will be disseminated.

IV. The goal of a safe and healthful work environment on campus will be achieved in part by:

A. A system of periodic self-evaluations developed by faculty and staff responsible for high-risk areas (those containing hazardous or potentially hazardous materials or activities).

B. Periodically inspecting for hazardous conditions and practices in other areas.

C. Establishing priorities for replacing substandard construction (e.g., wiring, flammable materials).

D. Providing all appropriate protective devices and ensuring that personal protective equipment is used.

E. Providing safe storage for volatile and explosive materials and hazardous wastes.

F. Providing appropriate equipment guards and insuring correct use.

G. Correcting hazardous conditions (e.g., walks, roofs, stairways, toxic material exposure).

H. Installing proper control measures for dealing with agents affecting the environment (e.g., proper ventilation, mufflers).

I. Educating and training personnel in safe work practices, first aid, etc.

J. Consulting with various experts (both on- and off-campus) to solve or prevent health and safety problems.

To be effective, any OSH program policy statement should meet the following criteria:

- It is issued by the governing board of the institution.
- It formally initiates the program and indicates its purpose.
- It lists the major program elements to be undertaken to the extent they are known at the time the policy statement is issued.
- It emphasizes the school's commitment to a safe and healthful operation and charges all departments and all levels to be responsible and accountable for the conduct of the program.
- It requires the cooperation of all campus personnel and conveys the President's intent to implement the program.
- It is distributed or made known to all campus personnel and to all new employees.

The precise form of the written policy is not as important as its clarity in stating the administration's sincere desires for a sound OSH program.

The importance of this visible support can scarcely be overemphasized. The OSH program will not succeed without the cooperation of many groups: faculty, part- and full-time staff, and contractors. Without a strongly worded administration commitment (and, if necessary, actions to back up this commitment), many individuals will give the program only a token effort.

Organizing The Program

Several organizational decisions are critical to an OSH program's success. An OSH Program Director must be selected. The location of the OSH program within the overall administrative structure must be determined. In addition, the organization of the OSH program and other safety and health practices should be brought under one jurisdiction or, at a minimum, be closely coordinated. In making these decisions, program planners must be cognizant of two criteria for effective programs: (1) the program must be organized with top administrative support, and (2) the program organization must focus on one person who has been given responsibility for its activities.

Many program planners and administrators may find that structural and staffing decisions are so closely intertwined that they are impossible to deal with independently or sequentially. Here, however, the structural considerations are discussed before discussing the staffing issues. This order assumes an ideal situation – one in which the planner can first decide how the program should be organized to make most effective use of the existing administrative structure, determine what the requirements for each position in the program organization will be, and, finally, select the right persons for these positions. In actuality, the program structure may be as dependent on the capabilities and location of individuals already employed by the institution (and who are available for the OSH program) as upon any "ideal" design.

The location of the OSH program within the campus administrative structure has significant bearing on its effectiveness in relating to other elements of the institution. Where should it be placed? There are at least four major functional areas to be administered in any college or university: academic affairs, business affairs, student services, and planning and development. Campus safety and health programs have been located at various levels within each of these areas.

Because of the nature of higher educational institutions, campus administrative structures are loose, with each department seeking to promote its own autonomy within the system. Each department tends to stress its own interests. Because an OSH program crosses all campus administrative and organization areas, it may conflict with other priorities wherever it is placed. By setting up the program as an independent department reporting directly to a top-level official, this conflict is lessened. Potential conflicts could arise, for example, if the OSH program were located with:

- Security—The OSH program risks being identified primarily as a police activity. However, this department may well serve as a resource in emergency preparedness, first aid training, and in staffing for selected safety inspections.

- Physical Plant—The OSH Program Director is in the tenuous position of conducting critical reviews of those activities under the control of his immediate supervisor. By its very nature, a safety program is an intervention process and as such should be administratively separate from maintenance and production operations.
- Business Affairs—Typically, this office has a major concern for short-term budget implications as opposed to long range savings accruing from an effective OSH program.
- Academic—Because priorities would generally favor further development of academic programs, the OSH program would suffer.

The specific location itself isn't the issue; all locations have various advantages and disadvantages. At some institutions, conflicts have been avoided through strong leadership. The success of an OSH program may depend not so much on its location as on the organization itself and the personalities of the people involved.

The ultimate placement of the OSH program should offer it status, access to decision makers, and easy availability to direct channels of communication with other safety and health activities.

The effectiveness of an OSH program probably depends more upon the Program Director's supervisor than on any other factor. Continuing top-level administrative support is best achieved by appointing a member of the top administration as the program's administrative overseer and by locating the OSH program within the overseer's domain. In a small institution, this administrative overseer may be the President; more likely it will be someone at the level of a vice president or vice chancellor.

The status of the program administrator in terms of closeness and accessibility to the President largely determines how much top management support the OSH program will receive. Equally important is the impact the program administrator's status can have on the way the OSH program is perceived by employees. Generally, the higher the position of the program administrator, the more important the program is assumed to be. Because the functions of the OSH program cross all organizational lines, major directives must come from the top. The program administrator serves not only as the program advocate at the top administrative level but also as a "last resort" source of authority behind the major directives of the program.

Thus, in selecting an organization location, several factors should be kept in mind:

- The OSH program should have enough flexibility in its administrative area to allow the Program Director to take action and exert authority.

- The interests and objectives of the OSH program should be compatible with other activities in the area, rather than conflicting.
- The OSH Program Director should be given recognition and status in the chosen location.
- The designated program administrator should have a sincere interest in supporting the OSH endeavor.

Once the program administrator and the institutional location for the OSH program have been selected, the structure of the program itself must be organized. Two basic considerations are involved in selecting the organizational structure of the OSH program. First, the program structure must be compatible with the existing organizational structure of the university. This may mean emulating administrative structures or systems that are already in effect for other college or university programs. It also may mean following already existing functional patterns. The OSH program structure should also be compatible with already existing lines of authority, e.g. a maintenance crew foreman cannot be expected to oversee the efforts of the chemistry professor.

Second, the OSH program must be organized to facilitate the accomplishment and coordination of its basic functions. At most institutions, this organization will be complicated by the fact that not all program functions can be performed by a full-time OSH program staff. At least some functions will need to be assumed by other institution employees. For example, at a large university, illness and injury records may be collected through the personnel department or through administrative offices in each school, whereas the analysis and interpretation of the data still would be within the realm of the central OSH program staff.

The "ideal" organization structure would be one having all OSH functions directly under the OSH Program Director. Actually, a variety of OSH activities will be handled by others. Hence, the OSH program must have close contact with these other areas. Of particular concern is the OSH program's relationship with persons handling worker's compensation and risk management activities, its interaction with the health services section and the campus hospital, and its participation in campus safety and health committees.

Because no one chart or group of charts could adequately explain possible structures and interactions for every institution with their diverse administrative structures and OSH needs, there is no organizational chart in this manual. In addition, any discussion of organizational charts cannot reflect personal contact or the influence of the program administrator and other campus officials.

Because of the nature of academic institutions, a great deal of the program's success is related to its adaptation and support within the school's particular administrative system.

Each college and university is different, and each OSH program will be unique. It may be helpful for program planners to consider the following procedures when formulating the OSH program structure:

1. Review the OSH functional areas and define the kinds of activities needed to accomplish each function. Be as specific as possible in describing the actual work to be performed.

2. Review these activities and try to determine which require immediate and continuous attention and what skills are needed. This indicates what staff is needed.

3. Determine whether the same or similar functions are already being performed elsewhere on campus. For example, some procedures for accident investigation might already be carried out by the campus police. Perhaps a revised reporting form and some special training might be all that is needed.

4. Avoid, when possible, assigning or locating OSH program activities in areas where conflicts of interest occur. For instance, individuals should not conduct formal inspections of their own work areas. Thus, a maintenance man is not the best choice for inspecting buildings and grounds.

5. Remember that all OSH activities should be coordinated. The Program Director should be aware of and in close contact with other people responsible for the various safety and health activities not under his direct authority.

In general, it can be assumed that the OSH program will be considerably more complex at a large institution than at a smaller one. At a small institution, the OSH staff will consist mainly of a Program Director. At a large university, the OSH program activities often will be performed by a number of individuals, supervised and coordinated by the Program Director. The more diffused or decentralized a function becomes, the less detailed knowledge the Program Director will have regarding it. This lack of day-to-day operating contact must be replaced with some other form of information exchange. This usually means either more paperwork or more meetings and conferences. The lack of personal contact may serve to diminish the perceived authority of the Program Director, which might normally be conveyed through a close working association. Additional formal policies, rules, and regulations may be required to convey this authority. The OSH program planners must ensure program effectiveness whenever responsibility is divided among several people by coordination through other mechanisms—

reporting systems, meetings, plans, procedures, etc. These mechanisms affect the time requirements of the program as well as the workload generated by the program. Such time and cost implications must be kept in mind when making decisions about the need for full-time OSH staff versus the use of existing employees on collateral assignments.

Staffing The Program

Earlier in this chapter, the close relationship between structural considerations and staffing concerns in influencing the organization of the OSH program was discussed. This section discusses some of the factors involved in making staffing decisions.

The point has been made that a successful OSH program must have a Program Director who is responsible and accountable for the operation of the program, and a program administrator who can represent the program at the administrative level. At some small colleges, these functions could be performed by one individual if that individual is able to provide top level administrative visibility and support to the program while being able to run the day-to-day operation. This usually is not the case and this manual covers the two positions separately.*

The Program Administrator

An institution should designate someone at the vice president or vice chancellor level to act as the OSH program administrator so that the OSH program lies within this person's organizational domain. Thus the program administrator acts as the OSH program advocate at the administrative level as well as the ultimate authority behind OSH program matters.

Basically, the program administrator has four responsibilities:

1. To oversee the Program Director who is directly responsible for the conduct of the OSH program,
2. To influence others in directing the OSH related activities under their control,
3. To advise the institution president about OSH related matters, and
4. To advocate the program during budget planning.

The program administrator generally enters the operational process only when the financial implications are considerable or there is an active debate regarding either the seriousness of, or the ap-

*The titles "Program Administrator" and "Program Director" are, of course, generic and intended to be descriptive of the type of roles these individuals would typically fulfill. They are not to be construed as suggested position titles.

propriate solution to, a problem. Even then, the problem may be solved by consultation with a committee of peers, such as the radiation committee, rather than involving the program administrator. When the program administrator is a vice president, the problems tend to be dealt with at that level by involving other vice presidents; this can have unforeseen effects on the Program Director's work.

The Program Director defines, assigns, and negotiates most functions and uses the influence of the program administrator as a last resort, such as in a situation where the cooperation of another vice president is required. Involvement of other vice presidents must be done cautiously as it may be interpreted as undermining the influence of some people. It also may carry jurisdictional disputes to too high a level. Because the Program Director must always work in cooperation with persons at his or her operational level, excessive use of vice presidential influence may backfire, creating additional personnel problems.

The program administrator should be someone with an active interest and a positive attitude toward OSH objectives and with a comfortable working relationship with the OSH Program Director. The program administrator also should be sufficiently acquainted with the OSH program activities to be able to advise the president and governing board on policy issues and also to provide a sounding board for the Program Director's problems and concerns.

The Program Director

The Program Director is the person responsible for seeing that the work of the OSH program is accomplished and that the program objectives are met. The Program Director is the institution's organizational focus for OSH activity. Therefore, the person in this position must be experienced in the field of occupational safety and health, committed to the success of the program, and endowed with the attributes of leadership, diligence, diplomacy, and administrative competency.

The Program Director position requires a wide variety of skills. First, the job requires specific technical knowledge about each of the OSH areas described in this manual, including a familiarity with the relevant federal, state, and local regulations. Second, it requires an understanding of OSH principles and techniques and the theory behind them. Third, the job requires the administrative skills to plan program activities, to develop and justify the budget, to supervise the activities of the OSH program staff, and to evaluate the effectiveness of the program. Finally, the job requires superior communication and interpersonal skills to gain the support of all campus personnel and to convey OSH knowledge to these people.

The Program Director's position is not an easy one. The role is really one of guidance and consultation regarding proper safety and health practices. There is no authority to enforce the OSH procedures. The supervisor has the responsibility for carrying out the program practices. Hence, the Program Director must rely on the coordination and cooperation of others to ensure that methods for correcting and controlling hazards are being carried out. It is the Program Director's task to influence others to take action, by motivating them to cooperate.

Obviously, the knowledge and ability of the Program Director has a crucial effect on the success or failure of an OSH program. It is a most critical element. Therefore, great care should be taken in choosing a person who meets the needs of the institution.

Frequently, it is difficult to find someone who has all of the skills mentioned above. Some compromises will have to be made, especially if the budget is limited. The best combination of education, skills, and experience for the OSH Program Director depends on such factors as the size of the institution, the types of activities conducted on campus, and the availability of technical skills among the academic and nonacademic staff. The smaller the institution, the broader the background of the Program Director must be. The chosen Program Director should be knowledgeable about the field of occupational safety and health; and he/she should continue his/her education by taking OSH courses or should become knowledgeable in some other way to be effective.

Because of interaction with academic personnel, it is best for the Program Director to have a degree in occupational safety and health or a related field. Generally, academic credentials have a high initial impact on the Program Director's capacity to influence others. However, after the program is operative, experience and skills become more significant as the Program Director gains credibility. The most desirable academic preparation for the OSH Program Director varies, depending upon the program needs of the institution. However, preparation in such diverse fields as occupational safety, industrial hygiene, environmental engineering, public health, environmental health, health physics, and related OSH disciplines are all appropriate.

At larger colleges and universities, the Program Director may direct an OSH staff; at the smaller institution, the Program Director may be the only full-time OSH employee or may be given responsibility for the OSH program as a collateral assignment.

With the possible exception of very small institutions, an OSH Program needs a full-time Program Director. However, many smaller colleges may be able to afford only a part-time Program Director.

At these institutions, an individual may be selected from the present staff to fill the position; the background and function of this individual could vary greatly. If the OSH program activities are assigned as an adjunct to other responsibilities, there is a definite danger that the OSH program may suffer. Where collateral assignments are made, there is always the risk that the person will be torn between conflicting priorities and that the OSH program responsibilities will become secondary to other duties. Particular care should be taken to define the specific duties of the Program Director in the position description and to allow that person time to accomplish the OSH duties. These program responsibilities should be clearly spelled out and communicated to all employees on campus.

Before the position of Program Director (or any other full-time position in the OSH program) can actually be filled, a job description should be developed for the position. The development of a written job description forces the program planners and administrators at the university to examine and clarify their expectations for the Program Director as well as for the OSH program in general. The written job description also provides guidance to the personnel department in recruiting and screening applicants. It should include:

- a general description of the job situation including the title of the campus official to whom the Program Director will report and the number and types of staff members, if any, to be supervised;
- a list of specific duties and responsibilities to illustrate the range of work expected; and
- a description of the types of education, work experience, and communication skills required for the job.

Physical requirements also are usually included. Exhibit 2 provides a sample job description for the Program Director position.

Other Safety and Health Staff Members

Several questions arise in determining the additional staff support the Program Director will require:

- When will additional full-time staff be required?
- Can certain OSH program responsibilities be assigned as collateral duties of positions already staffed and funded by the institution?
- Should generalists or specialists be sought?
- Should "ready-made" experts be recruited, or should generalists or existing staff members be specially trained for the school's unique requirements?
- Can full-time staff be used or should consultants perform certain functions?

Exhibit 2

JOB DESCRIPTION

STATE UNIVERSITY

OCCUPATIONAL SAFETY AND HEALTH SERVICES

Job Description, OSH Program Director

Major Responsibilities

Appointed by the Administrator to develop and execute a comprehensive occupational safety and health program for the university. In addition, supervises and coordinates the activities of the Safety Engineer/Specialist, Fire Safety Officer, Radiation Safety Officer, Industrial Hygienist, Environmental Health Specialist, Biohazard Safety Officer, and related specialists.

Specific Duties

1. Develops and administers a program encompassing all phases of safety and health for students, employees, and visitors. This includes such areas as industrial safety, hazardous waste disposal, sanitation hazards, building design, radiation safety, fire prevention, safety education, and accident prevention.
2. In conjunction with appropriate university officials, develops safety and health standards for every hazardous job assignment.
3. Acquires, develops, and distributes OSH materials appropriate for university needs.
4. Develops and implements an injury and illness investigation program to determine accident causes and the remedial action necessary for accident reduction or elimination.
5. Maintains accident records to determine frequency and severity rates and the identification of frequent accident areas.
6. Ascertains the needs for new OSH programs and submits recommendations regarding their implementation.
7. Supervises and coordinates the activities of specific employees as indicated.
8. Maintains liaison and participates, if appropriate, with those committees appointed to deal with special problems.

9. Keeps abreast of latest developments in OSH equipment, methods, and education.

10. Whenever appropriate, recommends and encourages the application of new equipment, methods, and education in the university's operations.

11. Responsible for the OSH program budget. Supervises the actual expenditure of monies allocated to the various functions.

12. Prepares written reports and maintains records of accident investigations, safety, and health recommendations and activities.

13. Is alert to safety and health problems or needs in areas beyond individual speciality or assignment and reports observations to that person or agency having the appropriate responsibility.

14. Coordinates safety and health programs and policies with other related departments.

15. Advises major departments and academic units on safety and health aspects of instructional materials and equipment.

16. Plans, organizes, directs, and participates in safety and health meetings, conferences, seminars, and training programs and safety and health committees.

17. As required, trains faculty and staff in safe and healthful work practices, use of safety equipment, etc.

18. Consults with faculty and staff to solve or prevent safety and health problems.

19. Performs related duties as assigned.

Minimum Acceptable Qualifications

TO BE DETERMINED BY PLACEMENT OFFICER

1. University degree in engineering, science, safety, or health.

AND

2. Three years general and three years specialized experience in the OSH field, with some administrative responsibilities.

Because each institution's program needs and financial resources are unique, only general guidance can be provided about the process of staffing an OSH program.

Consider such factors as the following in deciding whether additional full-time staff are required: (1) the projected time requirements of the anticipated program dutes, (2) whether some duties are similar enough to be combined under one position, and (3) the financial resources available to the program.

The program planners should analyze the major activities necessary to accomplish the program objectives and the time required to conduct these activities. (It may be helpful to consult with other institutions that have established programs to derive some estimates of how much time these particular tasks will take.) The results of this estimate should be a gross projection of the number of hours per week, or per month, required for each basic program activity. By grouping similar activities together to form potential job categories, OSH program planners can obtain a picture of the type of people needed for the OSH effort. The result should indicate how many full-time and part-time job categories are needed.

These estimating steps should assist OSH program planners in documenting the personnel needs and also in estimating the cost of obtaining personnel. Once rough job categories have been developed, it is possible to determine the existing competitive pay range for each job type. In estimating personnel costs, the use of existing employees in collateral assignments does not mean that the employees' services are "free" to the program. Institutions generally have program budgets that enable an employee's time to be charged to different program accounts on an hourly basis.

OSH program planners must have a clear sense of which activities and, hence, which job categories are of highest priority when the financial implications of personnel requirements are reviewed. If sacrifices are demanded, they can then be directed at the lower priority activities first.

The availability and accessibility of training resources should be considered in evaluating individuals for the OSH program staff for two reasons. First, it may be impossible to locate an individual with the perfect combination of capabilities that the OSH program requires. Second, it may be desirable for financial reasons to hire an individual with a good general background rather than hiring someone who already has acquired specialized skills. Therefore, in selecting an individual with less than perfect qualifications, consideration should be given to which of the qualifications can most easily be obtained through special training.

Although training can help bridge the knowledge gap, the primary determinants of the kind of personnel required by the OSH program will be the nature of the program and the skills embodied in the person of the Program Director. A large and diverse program may require another generalist to assist the Program Director, or it may require one or more specialists to provide skills that the Program Director lacks and the program needs.

Exhibit 3 is a listing of some OSH specialists who could be used by campus OSH programs. In this list, a summary of possible duties is presented after each job title. Individuals such as these could either be full-time or collateral duty personnel.

Exhibit 3

OCCUPATIONAL SAFETY AND HEALTH SPECIALISTS

Fire Protection Engineer. Inspects all buildings and prepares reports indicating areas that are not up to minimum safety and fire prevention standards, including both state and OSH code regulations. Performs tests of fire alarm systems and fire protection equipment. Reviews contracts and construction proposals for compliance with codes.

Occupational Safety Specialist. Inspects campus facilities and equipment for compliance with OSHA regulations and campus safety procedures. Reviews contracts and construction plans for compliance with campus and OSH regulations.

Industrial Hygienist. Investigates unsafe and unhealthy environmental conditions. This involves special training to (1) recognize the effects of environmental factors of man, (2) evaluate, on the basis of experience and with quantitative measurement techniques, the magnitude of these stresses within a specific environment, and (3) prescribe methods to eliminate, control, or reduce the harmful impact of such stresses.

Radiation Officer. Monitors all areas where ionizing radiation is involved to protect the individual and to prevent the spreading of radioactive contamination. Reviews all plans for the proposed use of radioisotopes and equipment producing ionizing radiation from the standpoint of radiological safety and makes recommendations accordingly. Supplies personal monitoring devices and provides instructions for research personnel regarding proper radiological safety procedures.

Environmental Health Specialist. May include sanitarians, sanitary engineers, and environmentalists. Range of concerns may include food sanitation, pollution control, solid waste management, housing, pest control, epidemiology, animal quarter sanitation, swimming pool sanitation, and hospital environmental sanitation.

NOTE: Many job titles may fit under each of these specialties.

Exhibit 4 is included to further assist you in selecting appropriate OSH professionals for your staff. This chart lists typical campus OSH activities in the left column and the people typically used in performing these tasks in the right column.

Exhibit 4

PERSONS RECOMMENDED FOR SPECIFIC OCCUPATIONAL SAFETY AND HEALTH ACTIVITIES

ACTIVITY	TYPICAL PERSON
Filling out records of occupational illness/injury	Immediate Supervisor; Personnel Officer; Medical Officer; Registered Nurse
Reviewing these records	Department Heads; Program Director; Immediate Supervisors; Insurance or Risk Manager
Conducting accident investigations	Immediate Supervisor; Program Director; Department Head
Atmospheric/noise monitoring	Industrial Hygienist; Head of Physics, Chemistry, or Engineering Department; Program Director
Handling/usage of insecticides	Industrial Hygienist; Head of Agriculture, Chemistry, or Biology Department; Program Director; Pest Control Supervisor
Reviewing equipment entry logs	Director, Physical Plant; Program Director
Testing fire alarms/systems	Fire Protection Engineer; Electricians; Director of Buildings and Grounds or Physical Plants; Program Director
Maintaining fire extinguishers	Fire Protection Engineer; Program Director; Campus security; Maintenance Engineer
Checking adherence to quantity limits for flammable liquids	Fire Protection Engineer; Program Director; Director of Buildings and Grounds or Physical Plants

Reviewing security controls for fire/safety violations	Fire Protection Engineer; Program Director; Director of Buildings and Grounds or Physical Plants
Inspecting electrical systems	Program Director; Electricians; Director of Buildings and Grounds or Physical Plants
Checking or maintenance/ repair of campus vehicles	Vehicle Safety Specialist; Program Director; Motor Pool Foreman
Ensuring maintenance crews follow safety/health regulations	Maintenance Supervisors; Director of Buildings and Grounds or Physical Plants; Program Director; Safety Specialist
Inspecting compliance with machine guarding standards	Safety Specialist; Director of Buildings and Grounds or Physical Plant; Maintenance Group Supervisors; Program Director
Maintaining machine guarding equipment	Maintenance Group Supervisors; Director of Buildings and Grounds or Physical Plants; Program Director
Reviewing new construction regarding its compliance with safety/health criteria and ensuring that all contractors follow campus safety regulations	Safety Construction Specialist; Fire Protection Engineer; Director of Buildings and Grounds or Physical Plants; Program Director
Inspecting campus facilities for overall compliance with campus and OSHA regulations	Safety Specialist; Program Director; Industrial Hygienist/Fire Protection Engineer; Department Heads; Director of Buildings and Grounds or Physical Plants
Inspecting food services	Sanitarian; Industrial Hygienist; Program Director; Medical Officer; Campus Nurse

Reviewing proposed *design* for new construction or remodeling for compliance	Fire Protection Engineer; Program Director; Director of Buildings and Grounds or Physical Plants
Safety training	Safety Training Specialist; Program Director; Department Heads; Director of Buildings and Grounds or Physical Plants
Handling, disposal, and monitoring of radioactive materials	Health Physicist; Industrial Hygienist; Head of Physics or Nuclear Engineering Department
Setting up campus traffic rules and reviewing campus/vehicular traffic patterns	Traffic Coordinator Vehicle Safety Specialist; Security Director; Program Director
Reviewing and monitoring laboratory and chemical operations	Industrial Hygienist; Chemist; Department Heads; Program Director

Consultants

Consultants are an alternative personnel resource that can be used advantageously in the OSH program. Consultants should not be used as substitutes for qualified full-time employees; they can, however, be used to fulfill certain kinds of responsibilities for special situations. Generally, consultants are best used

- to provide specialized expertise not available on the Program Director's staff or elsewhere in the university;
- to provide general staff support, but on an intermittent or short-term basis;
- to provide an objective, alternative viewpoint;
- to provide support for recommendations or activities that are unpopular or politically infeasible for a regular university staff member;
- to train university employees in certain aspects of OSH management.

Consultants to the OSH program may be outsiders to the institution or they may be members of the faculty or nonacademic staff hired to perform certain short-term assignments. In making these short-term assignments, however, care must be taken to ensure that the staff members are provided sufficient time and appropriate incentives to discharge their assignments successfully or objectively.

Several managerial techniques should be employed to use consultants most advantageously. First the OSH Program Director and staff should determine exactly what the consultant is to do for the program, including:

- defining the nature of the work to be done, in terms of specific tasks or activities;
- determining the desired output or product that should result (e.g., a manual, a report, or a training course);
- establishing a schedule, including target dates for when the output should be received; and
- defining the personnel time requirements.

When using outside consultants, solicit cost estimates and proposals from several potential contractors. This information not only enables economically sound decisions to be made, but the review of the proposals may provide the OSH Program Director or program planners with new insights on accomplishing the work. Other precautions that can be used to select the most appropriate consultants include:

- interviewing potential consultants before selection;
- obtaining recommendations from others;
- checking with past clients of potential consultants; or
- hiring a consultant on a conditional basis, using the initial assignment as a test of his usefulness.

Consultation services are also available from the local or regional offices of the Occupational Safety and Health Administration (OSHA) and the National Institute for Occupational Safety and Health (NIOSH). If the school is covered by a state OSH plan, state officials may provide such services. Consultation with these agencies on OSH problems or programs will not automatically result in an inspection of the facilities.

Whenever consultants are used, the Program Director should be the university contact and should monitor the consultant's progress. The productivity and quality of all OSH consultants should be monitored and evaluated.

Using Committees

In some instances, program planners and administrators may wish to consider establishing a committee or committees to serve as an adjunct to the actual program organization. For example, they may wish to obtain the advice of specialists on campus or to obtain the visible support and endorsement of departments or individuals who may not be directly involved in the OSH program. Sometimes, also, there is a short-term need for assistance during the start-up or planning phase of the OSH program—a need not expected to continue

when the program is underway. In both instances, a committee may be an appropriate device.

In planning the establishment of an OSH committee or committees, it is worthwhile to consider those activities that committees can and should do and those that they are incapable of doing. The basic function of a safety and health committee is to encourage fellow employees to comply with safety rules—a vital function in the academic community. As such, it may meet regularly to conduct safety inspections of operations and facilities, review accident reports, and recommend corrective measures. Its role is basically advisory and supportive.

A committee should never be used in place of, or as a supplement to, a Program Director. They are not appropriate for overseeing day-to-day operations. For example, a committee may approve new employees, but it should not be expected to supervise them. It may recommend or develop policies, but should not be expected to monitor performance. Because committee members are removed from the operational level, they may not be interested in investing a lot of time and energy in the program effort.

Safety and health committees *can* fulfill a number of necessary and worthwhile purposes for the campus OSH program:

- They can provide representation across a diversity of functions, specialties, and departments.
- They can provide visible top-level endorsement.
- They can provide authority and general leadership.
- They can share and diffuse the burden of unpopular tasks.

The need for special committees will vary from campus-to-campus and situation-to-situation. An *ad hoc* committee may be used when a specific problem requires the diversity of opinion and influence that a committee can provide. This type of committee can easily be formed and then disbanded after the project has been completed. Standing committees, however, may also be required to ensure continuous representation, even though a standing committee may have a greater tendency to polarize or to get "bogged down" in details; committee members also may not be able to sustain their involvement due to other work pressures. The usual approach regarding standing committees is to have one central safety and health committee and subcommittees for special hazard areas.

OSH program committees or subcommittees can have a number of different membership themes (administration oriented, faculty oriented, physical plant oriented, service area oriented, etc.) as well as different purposes. Examples of possible committee make-up based on the different membership are presented in Exhibit 5. Special purpose committees often are mainly composed of faculty members.

Exhibit 5

ILLUSTRATIVE OCCUPATIONAL SAFETY AND HEALTH OR SPECIAL COMMITTEES

ADMINISTRATION ORIENTED	SERVICE AREA ORIENTED
Vice President(s)	Food Services
Personnel Director	Medical Services
Insurance Manager	Campus Planning
Purchasing Director	Housing Officer
Director, Public Relations	Auxiliary Services
Legal Counsel	Security
OSH Program Director	Buildings and Grounds
Department Head(s), Faculty	Hospital Administrator
Union Representative(s)	OSH Program Director
OSH Program Director	Union Representative(s)
Student Senate Representative	
Business Manager(s)	

PHYSICAL PLANT ORIENTED	ACADEMIC ORIENTED
Director, Physical Plant	Faculty
Director, Buildings and Grounds	Research Staff
Maintenance Engineer	Extension Services
Traffic Coordinator	Continuing Education
Security Director	Medical School
OSH Program Director	Engineering School
Union Representative(s)	Nursing School
	OSH Program Director

Generally, committees consist of (1) individuals representing employees who are exposed to OSH hazards, (2) individuals representing campus officials responsible for hazard abatement, (3) individuals knowledgeable about particular hazard classes, and (4) student representatives. The Program Director should be included as a member of any OSH committee effort. However, the role of chairperson should go to a faculty member or an administrator, rather than the Program Director—someone outside the OSH program, goal oriented and influential.

The Program Director or another representative of the OSH program should also be an ex-officio member of all committees. Whenever representatives of campus administration are included, they should be of as high a level within the administration as possible to assure that committee recommendations reflect the thinking of the campus administration. Including high level administrators also reflects the administration's support for the overall program.

To be most effective, committees should meet as frequently as possible. In most cases, monthly is the most practical schedule; quarterly should be the minimum frequency. It is important that meetings be held on schedule. Infrequent meetings, particularly if periodic schedules are not met, contribute to the deterioration of committees. The committees should always meet with a fixed, announced agenda to ensure that some work of importance is accomplished at each meeting. This encourages regular attendance by the members.

Generating Employee Cooperation

When the organization and staffing plans for the OSH program have been made, it will be necessary to ensure that all university and college employees (particularly, those from whom OSH responsibilities are collateral to other job duties) participate and cooperate in carrying out the program.

One method of gaining employee support is involvement in the program. For instance, employees can be given responsibility for identifying and correcting hazards in their own work areas by conducting routine inspections. They also can be asked to participate in writing rules and regulations for their jobs, thereby recognizing their expertise. The committee concept can be used as a formal mechanism for gaining input from employees.

A more formal approach directed at employee involvement is the modification of written job descriptions to indicate the addition of OSH program responsibilities. This is advisable whenever OSH responsibilities constitute a significant modification or addition to the employees' existing responsibilities.

Another means of increasing employee cooperation is through training. Often poor cooperation is due to a lack of understanding and skill on the part of the employee. Increased knowledge and skill generally go hand-in-hand with increased acceptance of the OSH program. Types of employee training are discussed in Chapter III.

A most powerful influence on an employee's willingness to cooperate is the behavior and attitude of the employee's supervisor. The supervisor generally is responsible for training an employee on the job and for communicating the wishes and values of the administration. The supervisor sets the example. Therefore, supervisors must be convinced that carrying out the OSH program is in their interest, so that they will convey this message to their subordinates. There are three basic ways the behavior and attitude of supervisors can be improved. First, supervisors can be given authority for carrying out OSH program activities in the area under their control. Second, part of the supervisor's performance evaluation can depend on the extent of cooperation with the program by their areas. Third, the OSH efforts of the supervisor should be adequately rewarded

through recognition or additional responsibility when OSH goals are achieved. In these three ways, the supervisor's attitude and behavior with regard to the OSH program can be improved and, consequently, greater cooperation can be generated among subordinates.

There is still another way to generate employee cooperation. Employees should be made aware of the fact that following OSH procedures is a condition of their employment. Formal procedures should be developed for employees who do not obey campus OSH regulations. Taking such measures may protect the institution from OSHA citations for violations resulting from employee negligence. Under the OSH Act, it is quite clear that the responsibility for complying with safety and health regulations rests with the employer, even if the violation resulted from employee negligence. However, some organizations have been successful in contesting OSHA citations and penalties resulting from employee negligence when they were able to prove that adequate OSH procedures were developed, that sufficient training was provided all employees as to the procedures and requirements, and that the treatment of employees for failure to follow OSH procedures was made known to all employees and was applied in a fair and consistent manner.

In considering various methods for generating employee cooperation, the OSH program planners, administrators, and staff should use existing channels of communication and work within already established organizational patterns. For example, if certain employee groups belong to unions, changes in working procedures must be carefully worked out with employee representatives. It will be advantageous to stress the benefits of the OSH program to employees and specify the changes it may require in working procedures.

Obtaining Adequate Funding

The most frequently mentioned problem facing Program Directors, according to the background survey, is that of obtaining enough money to establish and maintain an effective OSH program. The majority of formal campus OSH programs was initiated after the OSH legislation of 1970. This indicates that the programs probably were established to fulfill the legal requirements rather than as a result of recognizing OSH problems.

OSHA legislation provides no funds to support OSH programs. The funds used for safety and health programs generally must come from other budget categories. Therefore, campus administrators are likely to view OSH programs as programs that are required, but that deserve only a nominal sum in the budget. This attitude may persist until a serious accident occurs or an OSHA compliance officer arrives.

Program administrators and Program Directors are, therefore, faced with the difficult task of convincing the individuals controlling the budget that the OSH program is important enough and productive enough to merit a higher level of funding. First, enough money must be obtained to support the OSH program staff. Then money must be obtained to carry out program activities designed to correct safety and health problems, such as reducing or controlling campus hazards uncovered by the OSH staff. Too often, money is provided to maintain the staff, but no money is provided for corrective actions. Consequently, the program remains ineffective.

Existing OSH programs obtain funding from a number of different sources. Money for staffing and supplies usually comes from general administrative categories in the budget. The source of that money varies. For state-operated institutions, it is state appropriations and tuition. For private institutions, it is endowments and tuition. Some general administrative funds come from the overhead charges on research grants. In addition, some OSH programs obtain money for staff from student health fees because of the services they provide by inspecting dormitories, cafeterias, and other student-used facilities.

Money to finance corrective actions comes from a variety of other sources. Minor corrections can often be undertaken immediately by the departments in which they occur, using their own operating funds. More expensive corrections, unless they are life-threatening, may have to be presented as a special item in the department's budget request for the following year. These special requests and expensive corrective actions may be financed out of general administrative funds, rather than being included in a department's operating budget. A few state legislatures have appropriated special funds to finance corrective actions. Another source of funds for corrective actions is research grants. If safety features must be altered as a result of the activities financed by a grant, then money for the alterations can be built into the grant application.

There are several less common sources of funding. A few institutions support their OSH programs through a payroll tax on their employees. The rationale behind this method is that the OSH program exists for the safety and health of the employees. Therefore, they should pay for it. Some institutions charge each department for the services provided by the OSH program. For example, the physics department would be charged a certain amount by the OSH program for monitoring the radiation exposure level of physics department researchers. Generally, however, few university departments—with the exception of the athletic program—are income-generating, so that this method of charges is more of an allocation procedure than a funding technique.

Identifying the potential sources of program money is essential. However, this knowledge, plus submitting funding requests, may not result in adequate budget. Before allocating large sums of money to occupational safety and health, most administrators must be convinced that the OSH program is producing enough benefits to merit the expenditures requested. Some of the methods that can be used to back up budget requests with data on program effectiveness are presented in Chapter III.

CHAPTER III. OCCUPATIONAL SAFETY AND HEALTH PROGRAM FUNCTIONS

The basic organizational and staffing considerations involved in planning and initiating a campus OSH program were discussed in Chapter II. This chapter examines the basic functions an OSH program must perform to meet the program objectives according to campus policy. Specifically, these functions are conducting on-site inspections, correcting hazardous conditions, developing written rules and regulations, providing training to employees, investigating accidents and occupational illness, keeping illness and injury records, and monitoring and evaluating the program's efforts.

Although some of these functions are required by OSHA regulations, together they represent the cumulative experience of OSH professionals regarding the activities that must be conducted for a program to be successful.

The program functions cross each of the traditional program components—fire safety, environmental health, laboratory safety, physical plant, water and sewage, construction, office/classroom safety, walking surfaces, fleet safety, security, food service, and health services. A program component focuses on specific types of hazards, such as those related to fire safety. Each program component must include each of these program functions for the proper identification, correction, and control of the specific potential hazards to be found within that area. For example, it is appropriate to develop written rules and regulations covering proper safety and health procedures for each component area such as fire safety and health services. To elaborate further, an effective control of a program component, such as laboratory safety hazards, must involve the basic functions of an OSH program—inspection, hazard abatement, rules and regulations, training, investigation of any accidents, recordkeeping, and program monitoring and evaluation.

Inspection and Abatement Procedures

An integral part of any OSH program is identifying and eliminating safety and health hazards. This section first discusses the processes of identifying potential and actual hazards through on-site inspections. Then it covers the process of initiating and following through on actions to correct or control those hazards. With these two major

activities, the OSH program seeks to ensure that the institution's policy for a safe and healthy environment is being carried out.

Conducting Inspections

Inspections should be conducted not only to uncover physical hazards and to assure compliance with OSHA regulations and other federal, state, and local codes, but also to examine unsafe practices among employees. Besides detecting problems concerning safety and health, these inspections can measure how well a supervisor or department is progressing in ensuring that conditions remain safe.

The supervisor is directly responsible for environmental conditions and for employee safety and (with the assistance of the OSH staff) should also be made responsible for locating and reducing hazards. Inspections performed by the OSH staff are then basically used to audit the supervisor's effectiveness.

Hence, there are two types of inspections—formal and informal. Formal inspections result in written reports to the Program Director listing the problems discovered and recommending corrective actions. Informal inspections usually do not result in a report to the Program Director. However, the fact that such inspections were conducted should be recorded, and if problems are discovered, they should result in some corrective action.

All campus facilities should be formally inspected at least once a year. More frequent inspections should be conducted in high risk environments such as the laboratory, physical plant, and food service areas.

Inspections should be conducted by the OSH program staff, by supervisors, and sometimes by outside experts. The frequency and type of inspections conducted by each depend on the organizational structure and staffing of the OSH program. With a well-established and adequately staffed program, the OSH staff should conduct most of the formal inspections. Operating supervisors should conduct the informal daily or weekly inspections. At an institution with few or no full-time OSH program employees, the OSH staff must concentrate on policy and procedures development and evaluation of effort, covering only some of the inspection areas. Here, the OSH program must rely on supervisors to conduct many of the formal inspections and to submit reports on results to the Program Director.

Both systems have advantages and disadvantages. The major advantage of using supervisors more for the formal safety inspections is that the supervisors are most familiar with their work area's activities and employees. It also requires fewer full-time professionals on the OSH program staff. The advantages of employing OSH staff

for these inspections presents a stronger case for program management. There are four main advantages:

1. The quality of the inspections probably will be higher because those conducting the inspections are OSH professionals.
2. There is greater objectivity because the supervisor's OSH performance is being checked by an outside observer.
3. The supervisor's work load is not increased.
4. The training effort required to maintain the program is much lower.

When the program must rely considerably upon supervisors, it is often helpful to arrange occasional inspections of work areas by other supervisors or by the department head. This compensates for the loss of objectivity inherent in asking a supervisor to check his or her own performance. The Program Director must be very diplomatic in initiating these arrangements to avoid conflicts among the parties involved.

The services of outside experts may be needed occasionally to supplement the skills available on campus and to achieve the necessary objectivity, particularly when there are few full-time OSH professionals to conduct inspections and recommend procedures.

All supervisors should conduct daily or weekly informal inspections. During the inspections, notes should be taken on all unsafe conditions and activities to ensure immediate corrective action. Such corrective action might include on-the-job training of an employee, repair of a machine guard, restocking of first aid supplies, or a variety of other activities. The supervisor should note the date of the inspection, the problems identified, and the corrective actions taken. These records are valuable in guarding both the supervisor and the institution against both federal and state compliance violations or court actions.

No discussion of inspections could be complete without mention of the Self-Evaluation Instruments (SEI's), manuals containing a series of comments and self-evaluation questions applicable to work areas and work situations for specific industries. The SEI is a valuable tool in the safety and health field and is useful in any OSH program for two reasons. First, it identifies areas that should be checked thoroughly during inspections. Second, it provides guidance to supervisors who are not as familiar with the legal requirements and the proposed safety and health procedures as the OSH program staff. An SEI can be developed for the various program components and functions discussed in this manual.

SEI's do have shortcomings, however, as they cannot cover all standards and procedures without becoming too large. Moreover, the standards that are easily included in an SEI tend to be concerned with equipment and facilities. A thorough inspection of any

area should consider a variety of factors: people, processes, equipment, materials, and the environmental conditions. This requires a thorough knowledge of OSH theory and accepted practices as well as all relevant regulations. It requires looking beyond the immediate violations to the causes of those violations to eliminate both the violation and the cause. Thus, care must be taken not to become overly dependent on the use of SEI's.

An inspector should use some type of evaluation or inspection form to ensure that all pertinent information is recorded and that all areas have been covered. However, a well-trained inspector should be familiar enough with the regulations so that he or she could conceivably be able to conduct an inspection effectively without the form. A Program Director should be familiar with the basic OSH regulations; full-time OSH specialists should be familiar with the regulations applying to their specialties.

Taking Corrective Action

After an inspection is conducted, a report should be sent to the Program Director listing the problems that were identified, an estimate of the severity of each hazard, and the recommended corrective actions. If the supervisor intends to correct any problems personally, this should be reported. A copy of the report should be sent to the department head or manager of the work area involved.

The Program Director must summarize the necessary remedies for the problems identified through inspections and through accident investigations. Exhibit 6 presents such a summary.

In developing the summary, the Program Director verifies the supervisor's estimate of the severity of the hazard; that is, whether it is an imminent danger violation, a serious violation, or a nonserious violation. The violations are arranged on the summary form in the order of severity. The corrective action(s) required for each, the items involved in estimating the cost of the corrective action, and the earliest date the corrective action could be completed are listed. This summary is then sent to the department head for initiation of corrective actions.

Both the Program Director and the program administrator determine which actions should be undertaken immediately. Generally, imminent danger and serious violations must be corrected immediately, because they could result in serious injuries or illnesses. Nonserious violations can be allowed a longer time period for correction.

The Program Director generally must negotiate with department heads or administrators to get the corrective actions carried out. This entails getting them to use their funds, allocating general funds for the project, or devising some other means to get the hazard corrected. The Program Director summarizes the results of

Exhibit 6.

SUMMARY OF CORRECTIONS REQUIRED FOR COMPLIANCE WITH CAMPUS REGULATIONS

Regulation section	Location and/or equipment	Hazard class*	Basis of violation	Corrective action required	Estimated repair cost 1978	1979	1980	Estimated completion date
			Physical Plant					
General duty	Printing press	1	Panel removed from back in area of electrical switches; however, power not locked out.	Lock out electrical circuits before starting maintenance or repair.	0	0	0	Immediate
Fire safety	Machine shop	2	Emergency lighting facilities have not been provided.	Install reliable illumination for all exit ways.	$3408		0	9-1-78
Machine guards	Office area	3	2 portable fans have inadequate fan blade guards	Equip each fan with metal blade guard having no more than 1/2" opening.	$50	0	0	10-1-78

*HAZARD CLASS

1 — Imminent danger: An existing danger that could reasonably be expected to cause death or serious physical harm.
2 — Serious violation: An existing danger that could probably be expected to cause death or serious physical harm.
3 — Nonserious violation: An unsafe existing condition or act that would probably not cause death or serious physical harm but would have a direct or immediate relationship on the safety and health of employees.

all of these actions in the corrective action plan, an example of which is shown in Exhibit 7. The plan lists each corrective action that will be undertaken, the individual responsible for that action, the date by which it should be completed, and the estimated cost of the project. The Program Director then sends a copy of the applicable portions of the corrective action plan to each work unit or department. The plan guides the activities of those carrying out the corrective actions and also serves as a basis for the Program Director to monitor the progress of these activities.

Written Rules and Regulations

OSH rules and regulations must be written, published, and communicated to employees to provide a consistent and easily administered approach that will ensure safe work practices in all campus activities. The development of these rules serves three important functions for an OSH program. First, the involvement of employees in the formulation of rules and regulations is an excellent way of motivating them to follow the procedures. Second, a school, by developing its own rules and regulations, is forced to pull together all of the relevant federal/state/local standards as well as all of the rules it has developed on its own. Third, these written documents set standards for safe work practices and establish a basis for disciplinary action against employees who fail to meet these standards.*

However, for these OSH rules to be effective and enforceable, they must be well conceived, realistic, fair, and presented in language and a form that can be easily understood by all. The development of such rules and regulations is not a simple task that can be accomplished overnight; it takes time and thought and should involve the input of OSH professionals, consultants, etc. In this section, some suggestions and guidelines are offered for the formulation, organization, and issuance of OSH rules and regulations.

Formulation of Rules and Regulations

There are two basic types of OSH rules and regulations:

1. General OSH rules applying to all personnel; and
2. Specific rules or procedures relating to particular jobs.

The ultimate responsibility for developing all rules and regulations should rest with the Program Director. General OSH rules and regulations can be formulated, however, by using any one or a combination of the following groups of campus personnel: the OSH pro-

*Written rules and regulations also can be invaluable in demonstrating good intent to OSHA compliance officers and in defending the school in court actions.

Exhibit 7

OCCUPATIONAL SAFETY AND HEALTH CORRECTIVE ACTION PLAN								
Date	Deficiency noted	Required regulation	Corrective action to be taken	Individual assigned to take action	Priority assigned and approved by	Date for completion	Cost estimated/ actual	OSH committee follow-up and date

gram staff, the personnel department, special rules-making committees, departmental committees of supervisors and employees, or employee safety committees.

General rules and regulations should include the following information:

- an overview of the existing OSH program, including the campus policy statement;
- a description of the various administrative functions responsible for the program;
- a list of those rules and procedures, including disciplinary actions, applicable to all personnel;
- an explanation of the responsibilities of the individual employee regarding the campus OSH program; and
- a list of emergency telephone numbers.

Specific OSH procedures or rules will be required for particular operations or jobs. In this case, the personnel who are directly involved with these specific tasks should be given the opportunity to develop the instructions. Any involvement of employees in developing the rules and regulations in this matter draws on their knowledge of a particular department or operation and, at the same time, motivates them to adhere to the rules that have been developed.

All available resource materials should be reviewed before writing the standards, but information should be limited to only those areas that are directly related to activities performed on campus.

Sources that may be useful include:

- federal, state, and local standards;
- standards published by nationally recognized organizations such as the American National Standards Institute (ANSI), American Society of Mechanical Engineers (ASME), American Conference of Governmental Industrial Hygienists (ACGIH), or National Fire Protection Association (NFPA);
- equipment operation manuals;
- materials provided by safety organizations, such as the National Safety Council (NSC) or the American Society of Safety Engineers (ASSE); and
- existing safety rules and manuals developed by other universities or colleges.

A special technique that can be useful in formulating specific rules and regulations for hazardous procedures is the "job safety analysis." This technique has been used in designing machinery and equipment with safety in mind. It is also useful in formulating rules in a manner applicable to a campus, for areas not covered by any known source. Persons responsible for the rules and regulations conduct job safety analysis by observing employees working at the

specific task or in the area of concern. This technique is described briefly in Exhibit 8. Exhibit 9 shows a training guide that was developed using this procedure.

The development of rules and regulations for specific jobs depends on the types of activities occurring on a campus and the number of employees involved in these activities. The better informed employees are, the greater their chance of avoiding accidents. Exhibit 10 lists examples of the types of topics that can be included in safety manuals.

Basic Organization and Format

The organization and format of the material should be given careful consideration. Of primary consideration is whether all rules should be grouped together in one document or should be in separate documents for specific departments or operations, with a general safety brochure for all employees. Choose whichever organization seems best for the OSH program's resources and intended method of distribution.

Exhibit 8

JOB SAFETY ANALYSIS PLAN

A job safety analysis plan has four steps: selecting the job, outlining job steps, identifying hazards, and formulating controls. These are described briefly as follows:

1. The job has to be carefully defined. Jobs selected for this analysis should be neither too broad nor too narrowly defined.
2. The job then is broken down into all of its successive steps. This usually is done by observing the performance of an experienced employee, recording each step, and then checking to see if the employee agrees with the procedure.
3. The hazards (if any) associated with each step are identified and labeled. Again, this is best done by observation, but can also include recall of past incidents. For each step, ask questions like: Can the employee be struck by anything, be caught in anything? Can he or she fall or overexert? Is the employee exposed to anything injurious such as gas, fumes, acid burns?
4. Rules or procedures are formulated to avoid the identified hazards. Some hazards will require environmental changes, such as in tools or materials, whereas others will require procedural changes. In the rules, be specific, avoiding generalities such as "Be Careful," or "Take Caution."

Exhibit 9

JOB SAFETY ANALYSIS TRAINING GUIDE

JOB Grinding castings		DATE June 7 1978
TITLE OF MAN WHO DOES JOB Pedestal grinder operator	FOREMAN SUPERVISOR	ANALYSIS BY
DEPARTMENT Physical plant	SECTION	REVIEWED BY
REQUIRED AND/OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT Leather gloves goggles safety shoes		APPROVED BY

SEQUENCE OF BASIC JOB STEPS	POTENTIAL ACCIDENTS OR HAZARDS	RECOMMENDED SAFE JOB PROCEDURES
I Right hand reaches into box grasps casting, carries to wheel	1 Strike hand on edge of box or casting cut hand on burr	1 Wear gloves or protect against sharp edges as required when handling raw stock
	2 Lifting of heavy castings	2 Use proper lifting procedures Get help if blank is too large for one man
	3 Drop castings on foot	3 Wear foot protection
II Left hand grasps left side of casting right and left hands push casting against wheel	1 Cut hand on burr strike hand against wheel	1 Wear gloves or protect against sharp edges of castings Keep hands clear of rotating parts Do *not* wear loose clothing
	2 Flying sparks dust chips or wheel breakage	2 Wear eye protection Ensure that all required guards are in place i e sideguards and tongue guard are of proper size, tool rests and tongue guards are properly adjusted
III Left hand places finished casting in box on side of machine	1 Strike hand against box or castings	1 Wear gloves or protect against sharp edges of castings
	2 Lifting of heavy castings	2 Use proper lifting techniques
	3 Drop castings on foot	3 Wear foot protection
		4 Provide for moving of finished stock

Exhibit 10

CONTENTS OF A TYPICAL UNIVERSITY SAFETY GUIDE

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Emergencies Involving Utilities	
Emergencies Involving Electric Shock	
Appendix B POLICY FOR PROCUREMENT OF EYE PROTECTION	
Recommended Lens Shades	
Recommended Eye and Face Protectors	

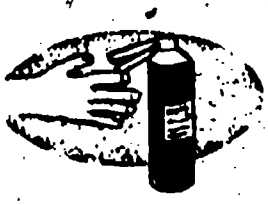
After determining the basic organization of the OSH rules (one document or several), the format should be chosen. In form, such documents can range from loose-leaf sheets or posters to booklets or manuals, depending upon the time and funds available for such a venture. This also takes into account the level of detail that will be involved in each piece. The format used in presenting these safety and health rules can vary, depending upon the imagination of the rule-making body.

No matter which format is used, make the publication as comprehensive, interesting, and attractive as possible. The rules should be stated in simple, explicit terms with few, if any, exceptions. Attractiveness and interest can be aided by involving students from the school's art department to design the layout and prepare drawings or photographs. An example of the use of illustrations can be found in Exhibit 11.

Exhibit 11

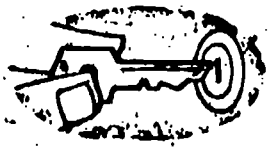
EXAMPLE OF SAFETY RULES POSTER*

VI. VEHICLE FIRES

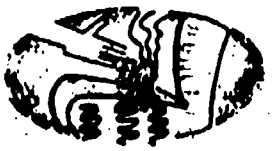


A small, 2-1/2 lb. dry-chemical-type fire extinguisher should be a part of the vehicle's emergency equipment.

If a fire should occur in the engine, immediately *turn off the ignition* and, if possible, call the fire department.



Lift the hood of the vehicle cautiously in case of flare-up. Be sure to protect your hands. Direct the extinguisher at the base of the flame and stand by in case fire restarts.



If a fire extinguisher is not handy, use dirt, sand, or even a large cloth or coat to smother the fire.

If a fire should occur in the seats, use water and, if possible, remove the seats from the vehicle.

Prevent a vehicle fire. If you smell gasoline or suspect electrical trouble, have the vehicle inspected immediately.

*University of Georgia *Fire Safety Manual*

Issuance to Campus Employees

After the rules have been drafted, relevant rules should be posted at specific job sites on campus, so that employees may comment on their appropriateness. The notice should indicate why the rules were developed, their proposed adoption date, and the cut-off date for comments. Labor unions or other such groups may also be asked to review the rules and comment. Allowing employees to react to rules that apply to them and giving them an opportunity to comment from their own experiences should encourage acceptance and cooperation when the rules are made, distributed, and enforced.

Each employee should receive a copy of those general safety and health rules that apply to all personnel. In addition, employees performing hazardous tasks should receive copies of the specific rules developed for those tasks.

Once the rules have been issued in final form, a review mechanism should be developed to provide employees and supervisors the opportunity to suggest additions, deletions, or alternations. As modifications are needed or as new rules are developed, the updated versions and the new rules must be issued.

Safety and Health Training

Many accidents and injuries that occur at colleges and universities result from employee oversight or failure to abide by published safety and health rules. Unsafe practices among maintenance or physical plant employees, for example, include failure to use personal protective equipment, improper lifting and carrying, and unsafe use of materials and equipment. Often these unsafe practices can be related directly to lack of training; employees don't know about the hazards to which they are exposed nor do they know how to handle these potential dangers. Thus, safety and health training is a vital element of the campus OSH program.

Care must be taken to ensure that employees receive and assimilate safety and health information and that they are motivated to act on this information. This calls for a formal, fully-oriented, and documented program—a program designed to develop an awareness of safe and healthful practices as they apply to each employee.

The importance of such training is recognized in the Occupational Safety and Health Act, which contains a number of regulations requiring that training be provided. These regulations are described in the OSHA publication "Training Requirements of the OSHA Standard," (OSHA 2082), which is available from the OSHA Regional Offices. Although the OSHA regulations specify some functional areas in which training is required (e.g., operation of

material handling equipment, welding equipment, power presses, laundry machinery); they do not specify the type of training that must be given, nor do they identify all types of training that may be needed. Basically, the responsibility for identifying and meeting OSH training needs rests with each individual institution.

Because such a variety of activities occur on campus, this section cannot present detailed course descriptions. Some general guidelines for identifying what types of training should be included in your OSH program are, however, given.

General Guidelines

Employees should be trained to maintain their own safety and the safety of others. In general, the need for training arises:

- when a new employee is hired;
- when an employee transfers to another job;
- when new equipment is installed or a new task is assigned; and
- at any time when the lack of employee knowledge or skill is creating accidents or potential hazards.

Training should be based upon assessed needs. If lack of employee skills or knowledge is thought to be at the root of a hazard or potential problem, the training should be planned. Assessing what employees need to know in terms of safety procedures takes into account some type of analysis of the job itself, the equipment being used, any operating or behavioral problems, and an overall appraisal of the individual's job performance.

Once needs have been determined, training objectives must be developed and documented. These objectives must be stated in terms of what the employee should know and be able to do by the end of the training. Examples are:

- The employee shall be able to describe the procedure to follow in case of an emergency (fire, chemical spill, etc.).
- The employee shall be able to effectively lock out power machinery before performing maintenance or repair operations.
- The employee shall be able to demonstrate an ability to satisfactorily clean and use the respiratory protective equipment.

Using these objectives makes it easier to determine if the employee really has obtained the necessary skills or knowledge at the end of the training. Once the objectives have been defined, determining the training content and method is simplified—the trainer can focus on the experiences to be provided so that the employee will achieve the desired knowledge. The content and method suggested by the sec-

ond objective, for instance, might consist of showing employees how machinery is locked out and letting them practice this procedure.

Most training occurs on the job, with the supervisor as trainer. In some instances, training involves other persons such as the Program Director or outside consultants. A variety of training tools (movies, slides, posters, manuals, etc.) can be used. Some of these are already developed and can be purchased from various safety-organizations and commercial companies.

Groups to be Trained

In considering who needs training and the type of training required, we must consider the types of employees involved; the degree of risk and hazards to which the employee would be exposed during normal activities; and the specific OSH responsibilities that the individual may have in the overall institutional program. Three different groups emerge:

1. Professional personnel who may have OSH as their primary responsibility or as a collateral duty assignment;
2. Personnel in high risk environments (physical plant and laboratory activities); and
3. Professional and nonprofessional personnel working in low risk environments (classrooms and office areas).

OSH Program Staff

Depending upon their backgrounds, individuals with the primary responsibility for planning and directing the OSH program may need additional training to carry out their assigned tasks. Again, the specifics of this training will depend on the activities these individuals are expected to perform and their experience in doing them.

In general, a training program for these people should include comprehensive treatment of the principles of accident prevention and hazard identification that will result in a thorough understanding of how accidents and illnesses occur and how they can be prevented. In this context, OSH training should include the following elements:

- job safety analysis,
- inspection procedure,
- accident investigation,
- reporting and recording systems,
- worker motivational techniques, and
- management theory.

Employees in High Risk Environments

The supervisor of employees who work in high risk situations is the key factor in any campus OSH program, for this individual has the

most control over the people and the working environment. (This covers faculty who oversee students in labs, as well as physical plant supervisors.) Hence, these supervisory personnel must be formally trained in safe, healthful work practices. Such training should include some or all of the following topics as they apply to the specific departments:

- basic elements of the campus OSH program;
- campus safety rules and procedures (general and specific for each department);
- the supervisor's role in accident prevention;
- job safety analysis;
- emergency procedures;
- manual materials handling;
- machine guarding and personal protective equipment;
- motivational aspects, covering communications, human relations, discipline, and setting objectives; and
- techniques for training employees in safety procedures and for evaluating their performance.

Supervisors must be able to use a variety of techniques, such as personal observation, inspections, common sense, job studies, accident investigations, and analysis of accident statistics to detect workplace hazards. The problem must be approached with the proper attitude and with the question: "How could an accident occur here?" This attitude and concern must be applied evenly and consistently in all situations. Supervisors must learn to be effective in motivating employees to follow safe operating procedures and in enforcing OSH rules in a consistent manner. They must learn to enforce these rules in all cases, for all personnel. After this training course, the supervisor should be able to evaluate the worker's overall performance with consideration given to unsafe acts and conditions. Finally, the supervisor must set an example in adhering to all safety and health regulations and procedures.

The employee involved in a high risk operation should be instructed in the general safety and health regulations of the campus as part of the general orientation session given to all employees. In addition, employees in high risk situations must be given training related to the rules and procedures to be followed in their own departments. Training for specific jobs and equipment generally can be handled most appropriately on the job by the employee's immediate supervisor. This training should include procedures to be followed in case of emergencies.

Employees who are transferred from low risk to high risk areas must be given the additional, specific training necessary for their new positions. This training should take place *before* the employees begin their new jobs.

Employees in Low Risk Environments

All employees should be acquainted with the various safety and health efforts undertaken at the campus with emphasis on their role in these efforts. A general safety and health orientation session should be scheduled periodically for all new employees. This session can be part of the overall orientation program. If these sessions have not been given on campus in the past, all employees should attend. The orientation program should include:

- general campus safety and health rules and regulations (distributed in written form for later reference);
- employee rights and obligations under existing safety and health legislation;
- the supervisor's role in safety and health training;
- the organization and functions of the campus safety program, including the names of individuals to whom questions, suggestions, and complaints should be addressed;
- general emergency procedures; and
- the employee's responsibility in accident prevention.

So that employees can easily review the material presented, a copy of the campus safety and health rules (discussed in the previous section) should be printed and distributed at the session.

Sources of Training Courses and Materials

The faculty and staff should not be overlooked as a source for developing and presenting training courses and for materials. Often on a college or university campus, there are individuals experienced in materials development and training, as well as departments possessing all of the audio-visual and printing equipment necessary to produce the materials. Use of this expertise may result in the highest quality and least expensive materials and courses.

If training materials are not available on campus, outside assistance should be obtained in developing and presenting the training programs, particularly for the OSH staff. Once this training has been completed, the other two groups often can be trained by the OSH program staff with the use of available materials.

Numerous organizations have the ability to develop and present the various training packages discussed above. These general training programs can be purchased and modified to fit the needs of your own program. Apply caution to the use of "canned" materials. They should be reviewed for their relevance (in light of the desired results) before being used. Several universities now offer training courses and seminars that are available to campus OSH personnel. These institutions also give instruction toward advanced degrees in safety and health occupations. In addition, a listing of the courses offered by the following organizations provides examples of the

types of available training courses that are appropriate for the OSH program staff and for supervisors of employees in high risk situations:

- NIOSH Division of Training and Manpower Development (4676 Columbia Parkway, Cincinnati, Ohio 45226) offers short courses for professional personnel in the field of occupational safety and health. These courses range from basic introductory programs to specialized technical areas using laboratory learning. In addition, the division supplements its direct training effort by providing assistance through lectures and consultation. A detailed listing of courses offered, course schedules, and fees can be obtained by writing for their course catalog.
- OSHA Training Institute (10600 West Higgins Road, Rosemont, Illinois 60018) has a 1-week course in Instructor Training for Voluntary Compliance. The course is designed to prepare trainees to teach self-inspection procedures and correction of workplace deficiencies. College and university instructors are particularly encouraged to enroll. No fee is charged.
- National Safety Council (444 N. Michigan Avenue, Chicago, Illinois 60611) offers a variety of courses at their Safety Training Institute. Courses particularly relevant are Fundamentals in Occupational Safety, Safety Training Methods, Safety Management Techniques, and Laboratory Safety. Upon request, the NSC will provide a booklet describing these and other course offerings.

OSH training also is provided by some insurance companies and by private consulting firms.

In addition to courses, a variety of instructional materials are available for purchase from insurance companies and associations. Prices vary, as do the quality and the type of materials offered. These materials can be purchased in several forms: slides, movies, booklets, textbooks, etc. Many instructional materials can be obtained from the federal government at nominal prices. Sources to check for such materials are:

- The Superintendent of Documents
  U.S. Government Printing Office
  Washington, D.C. 20402
- National Technical Information Service
  U.S. Department of Commerce
  Springfield, Virginia 22151
- National Audiovisual Center
  Government Services Administration
  Washington, D.C. 20409

Additional training references are listed in Chapter IV, which covers sources of information.

Recordkeeping and Reporting Requirements

It is wise to document all training, medical examinations, inspections, accident investigations, and other tasks conducted by your OSH program. When money or manpower is expended on any effort, it is worth the extra time required to document that effort. This documentation *will* be valuable not only in demonstrating good faith to OSHA inspectors, but also in defending the institution against court actions. In addition, it can be used to monitor the effectiveness of your program, analyze problem areas and trends, and justify program expenditures to your administration.

This section discusses the recordkeeping and reporting requirements specified by OSHA. The next section expands upon these requirements to show how such recording procedures can be useful to an OSH program.

OSHA requires that employers keep certain basic records on occupational injuries and illnesses. One use of these records is to provide data to the Bureau of Labor Statistics (BLS). Congress gave BLS the responsibility for generating occupational injury and illness statistics to indicate trends and progress over time. These aggregate statistics are used by the various agencies concerned with safety, accident prevention, and enforcement to alter existing systems and to develop new procedures for reducing the losses due to occupational injuries and illnesses.

Not every employer is asked to submit records to BLS each year. Only those schools falling within statistical samples determined by BLS are required to report to BLS or to cooperating states at the end of a recording period. However, *every* employer with 11 or more employees must keep the same basic records.

OSHA Injury/Illness Recordkeeping Requirements

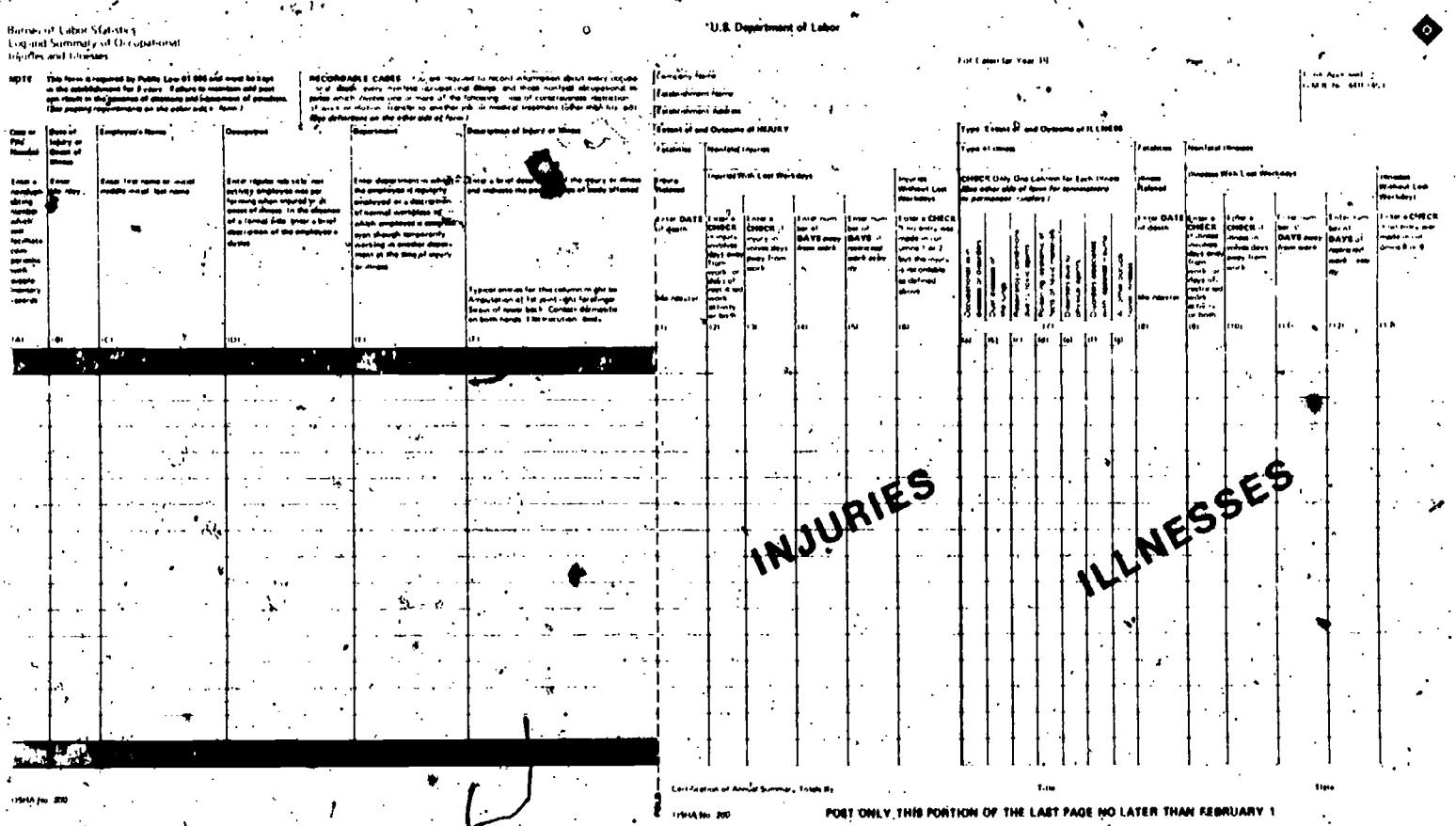
The OSHA reporting system requires that two basic types of records be kept by each employer:

- OSHA No. 200 (exhibit 12 — front and back) — Log and Summary of Occupational Injuries and Illnesses
- OSHA No. 101 (exhibit 13) — Supplementary Record of Occupational Injuries and Illness

Reproductions of the actual forms appear as Exhibits 12 and 13. Below is a detailed description of these forms.

The Log and Summary of Occupational Injuries and Illnesses (OSHA No. 200 Exhibit 12, front & back) is used to classify and summarize injuries or illnesses and to note the severity and out-

Exhibit 12 (front)



POST ONLY THIS PORTION OF THE LAST PAGE NO LATER THAN FEBRUARY 1

Exhibit 12 (back)

Instructions for OSHA No. 200

I Log and Summary of Occupational Injuries and Illnesses

Each employer subject to the recordkeeping requirement of the Occupational Safety and Health Act of 1970 must maintain for each establishment a log of all recordable occupational injuries and illnesses. This form (OSHA No. 200) may be used for that purpose. A substitute for the OSHA No. 200 is acceptable if it is equally easily readable, and understandable to the OSHA No. 200.

Enter each recordable case on the log within six (6) workdays after learning of its occurrence. Although other records must be maintained at the establishment to which they refer, it is possible to prepare and maintain the log at another location using data processing equipment if desired. If the log is prepared elsewhere, a copy updated to within 45 calendar days must be present at all times in the establishment.

Logs must be maintained and retained for five (5) years following the end of the calendar year to which they relate. Logs must be available (normally at the establishment) for inspection and copying by representatives of the Department of Labor, or the Department of Health, Education and Welfare or States accorded jurisdiction under the Act.

II Changes in Extent of or Outcome of Injury or Illness

If during the 5-year period the log must be retained, there is a change in an extent and outcome of an injury or illness which affects entries in columns 1, 2, 6, 8, 9, or 11, the first entry should be lined out and a new entry made. For example, if an injured employee at first required only medical treatment but later lost workdays away from work, the check in column 6 should be lined out and checks entered in columns 2 and 3 and the number of lost workdays entered in column 4.

In another example, if an employee with an occupational illness lost workdays but returned to work and then died of the illness, the entries in columns 3 and 10 should be lined out and the date of death entered in column 8.

The proper entry for an injury or illness should be lined out if later found to be nonrecordable. For example, an injury or illness which at later determination was not work related or which was initially thought to involve medical treatment but later was determined to have involved only first aid.

III Posting Requirements

A copy of the totals and other information following the third line of the last page for the year must be posted at each establishment in the place or places where notices to employees are customarily posted. This copy must be posted no later than February 1 *and must remain in place until March 1.*

Even though there were no injuries or illnesses during the year, zeros must be entered on the totals line, and the form posted.

The person responsible for the annual summary totals shall certify that the totals are true and complete by signing at the bottom of the form.

IV Instructions for Completing Log and Summary of Occupational Injuries and Illnesses

Column A — **CASE OR FILE NUMBER** Self-explanatory.

Column B — **DATE OF INJURY OR ONSET OF ILLNESS**
For occupational injuries enter the date of the work accident which resulted in injury. For occupational illnesses, enter the date of initial diagnosis of illness or, if absence from work occurred before diagnosis, enter the first day of the absence attributable to the illness which was later diagnosed or recognized.

Columns C through P — Self-explanatory.

Columns 1 and 8 — **INJURY OR ILLNESS-RELATED DEATHS**
Self-explanatory.

Columns 2 and 9 — **INJURIES OR ILLNESSES WITH LOST WORKDAYS**
Self-explanatory.
Any injury which involves days away from work, or days of restricted work activity, or both, must be recorded since it always involves one or more of the criteria for recordability.

Columns 3 and 10 — **INJURIES OR ILLNESSES INVOLVING DAYS AWAY FROM WORK** Self-explanatory.

Columns 5 and 11 — **LOST WORKDAYS — DAYS AWAY FROM WORK**
Enter the number of workdays (consecutive or not) on which the employee would have worked but could not because of occupational injury or illness. The number of lost workdays should not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.
NOTE For employees not having a regularly scheduled shift, such as certain truck drivers, construction workers, farm labor, casual labor, part-time employees, etc., it may be necessary to estimate the number of lost workdays. Estimates of lost workdays shall be based on prior work history of the employee AND days worked by employees not ill or injured, working in the department and/or occupation of the ill or injured employee.

Columns 4 and 12 — **LOST WORKDAYS — DAYS OF RESTRICTED WORK ACTIVITY**
Enter the number of workdays (consecutive or not) on which because of injury or illness:
(1) the employee was assigned to another job on a temporary basis or
(2) the employee worked at a permanent job less than full time or
(3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

The number of lost workdays should not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

Columns 6 and 13 — **INJURIES OR ILLNESSES WITHOUT LOST WORKDAYS** Self-explanatory.

Columns 7a through 7g — **TYPE OF ILLNESS**
Enter a check in only one column for each illness.

TERMINATION OR PERMANENT TRANSFER Place an asterisk to the right of the entry in columns 7a through 7g (type of illness) which represents a termination of employment or permanent transfer.

V Totals

Add number of entries in columns 1 and 8.
Add number of checks in columns 2, 3, 6, 7, 9, 10 and 11.
Add number of days in columns 4, 5, 11 and 12.
Totals are to be generated for each column at the end of each page and at the end of each year. Only the yearly totals are required for posting.

If an employee's loss of workdays is continuing at the time the totals are summarized, estimate the number of future workdays the employee will lose and add that estimate to the workdays already lost and include that figure in the annual totals. No further entries are to be made with respect to such cases on the next year's log.

VI Definitions

OCCUPATIONAL INJURY is any injury such as a cut, fracture, sprain, amputation, etc., which results from a work accident or from an exposure involving a single incident in the work environment.
NOTE Conditions resulting from animal bites, such as insect or snake bites or from one-time exposure to chemicals are considered to be injuries.

OCCUPATIONAL ILLNESS of an employee is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact.

The following listing gives the categories of occupational illnesses and disorders that will be utilized for the purpose of classifying recordable illnesses. For purposes of information, examples of each category are given. These are typical examples, however, and are not to be considered the complete listing of the types of illnesses and disorders that are to be counted under each category.

7a Occupational Skin Diseases or Disorders
Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; chrome ulcers; chemical burns or inflammations, etc.

7b Dust Diseases of the Lungs (Pneumoconioses)
Examples: Silicosis, asbestosis, coal worker's pneumoconiosis, byssinosis, siderosis, and other pneumoconioses.

7c Respiratory Conditions Due to Toxic Agents
Examples: Pneumonitis, pharyngitis, rhinitis or acute congestion due to chemicals, dusts, gases, or fumes; farmer's lung, etc.

7d Poisoning (Systemic Effect of Toxic Materials)
Examples: Poisoning by lead, mercury, cadmium, arsenic or other metals; poisoning by carbon monoxide, hydrogen sulfide or other gases; poisoning by benzol, carbon tetrachloride or other organic solvents; poisoning by insecticide sprays such as parathion, lead arsenate; poisoning by other chemicals such as formaldehyde, plastics, and resins, etc.

7e Disorders Due to Physical Agents (Other than Toxic Materials)
Examples: Heatstroke, sunstroke, heat exhaustion, and other effects of environmental heat; freezing, frostbite, and effects of exposure to low temperatures; caisson disease; effects of ionizing radiation (isotopes, X rays, radium); effects of nonionizing radiation (welding flash, ultraviolet rays, microwaves, sunburn), etc.

7f Disorders Associated With Repeated Trauma
Examples: Noise-induced hearing loss; synovitis, tenosynovitis and bursitis; Raynaud's phenomena; and other conditions due to repeated motion, vibration or pressure.

7g All Other Occupational Illnesses
Examples: Anthrax, brucellosis, infectious hepatitis, malignancies and benign tumors; food poisoning; heatstroke, sunstroke, frostbite, etc.

MEDICAL TREATMENT includes treatment (other than first aid) administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does NOT include first aid treatment (one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care) even though provided by a physician or registered professional personnel.

ESTABLISHMENT A single physical location where business is conducted or where services or industrial operations are performed. (For example: a factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office). Where distinctly separate activities are performed at a single physical location, such as contract construction activities operated from the same physical location as a lumberyard, each activity shall be treated as a separate establishment.

For firms engaged in activities which may be physically dispersed, such as agriculture, construction, transportation, communications, and electric, gas, and sanitary services, records may be maintained at a place to which employees report each day.

Records for personnel who do not primarily report or work at a single establishment, such as traveling salesmen, technicians, engineers, etc., shall be maintained at the location from which they are paid or the base from which personnel operate to carry out their activities.

WORK ENVIRONMENT is composed of the physical location, equipment, materials processed or used, and the kind of operations performed by the employee (and whether on or off the employer's premises).

come of each case. This record covers the date of the injury or illness; name, occupation, and department of employment of the employee; a brief description of the injury or illness; and whether or not this resulted in death or loss of work. Each recordable injury or illness occupies one line.

An equivalent form or a computer printout may be substituted for OSHA Form 200 as long as the form or printout is detailed, easily readable, and as understandable as the OSHA No. 200. A recordable case must be entered on the log within 6 working days of learning of the incident. The log should be maintained in each work establishment (e.g., by data processing equipment) if each incident is recorded on the log at the place it is maintained within 6 days of the incident, and if a copy of the log, current to within 45 calendar days, is maintained at the work establishment.

A copy of the totals and information following the fold line of the last page for the year must be posted at each establishment in the place or places where notices to employees are customarily posted. This copy must be posted no later than February 1 and must remain in place until March 1. Even though there were no injuries or illnesses during the year, zeros must be entered on the totals line, and the form posted. The person responsible for the annual summary totals should certify that the totals are true and complete by signing at the bottom of the form.

The Supplementary Record of Occupational Injuries and Illnesses (OSHA No. 101) is designed to supplement the information on the OSHA log for individual occurrences. This additional information includes questions as to the cause and location of the injury, the attending physician, and the medical care required. Worker's compensation, insurance forms, or other forms may be used instead of OSHA Form 101—if the same information is recorded. Since recordkeeping requirements under OSHA may differ from the state's worker's compensation rules, be sure that all OSHA items are covered if this form is used.

In addition, the school also may be called upon to fill out OSHA Form 103, an Occupational Injuries and Illnesses Survey form. Receipt of this form indicates that the school has been selected as part of the sample of employers to be surveyed by the Bureau of Labor Statistics. Aggregate statistics on occupational injuries and illnesses are available from BLS as a result of this survey.

These records, except for OSHA Form 101, must be available at the work establishment for inspection and copying by OSHA compliance officers at all times. All records must be maintained in the office for 5 years. OSHA has not issued an official position on what constitutes a work "establishment" in an educational institution. However, unofficial observations from OSHA personnel indicate that an entire university or a major campus of a multi-campus

Exhibit 13

OSHA No. 101
Case or File No. _____

Form approved
OMB No 44R 1453

Supplementary Record of Occupational Injuries and Illnesses

EMPLOYER

1. Name _____
2. Mail address _____ (No. and street) (City or town) (State)
3. Location, if different from mail address _____

INJURED OR ILL EMPLOYEE

4. Name _____ Social Security No. _____ (First name) (Middle name) (Last name)
5. Home address _____ (No. and street) (City or town) (State)
6. Age _____ 7. Sex: Male _____ Female _____ (Check one)
8. Occupation _____ (Enter regular job title, not the specific activity he was performing at time of injury.)
9. Department _____ (Enter name of department or division in which the injured person is regularly employed, even though he may have been temporarily working in another department at the time of injury.)

THE ACCIDENT OR EXPOSURE TO OCCUPATIONAL ILLNESS

10. Place of accident or exposure _____ (No. and street) (City or town) (State)

If accident or exposure occurred on employer's premises, give address of plant or establishment in which it occurred. Do not indicate department or division within the plant or establishment. If accident occurred outside employer's premises at an identifiable address, give that address. If it occurred on a public highway or at any other place which cannot be identified by number and street, please provide place references locating the place of injury as accurately as possible.

11. Was place of accident or exposure on employer's premises? _____ (Yes or No)
12. What was the employee doing when injured? _____ (Be specific. If he was using tools or equipment or handling material, name them and tell what he was doing with them.)
13. How did the accident occur? _____ (Describe fully the events which resulted in the injury or occupational illness. Tell what happened and how it happened. Name any objects or substances involved and tell how they were involved. Give full details on all factors which led or contributed to the accident. Use separate sheet for additional space.)

OCCUPATIONAL INJURY OR OCCUPATIONAL ILLNESS

14. Describe the injury or illness in detail and indicate the part of body affected. _____ (e.g. amputation of right index finger at second joint; fracture of ribs; lead poisoning; dermatitis of left hand; etc.)
15. Name the object or substance which directly injured the employee. (For example, the machine or thing he struck against or which struck him; the vapor or poison he inhaled or swallowed; the chemical or radiation which irritated his skin; or in cases of strains, hernias, etc., the thing he was lifting, pulling, etc.) _____
16. Date of injury or initial diagnosis of occupational illness _____ (Date)
17. Did employee die? _____ (Yes or No)

OTHER

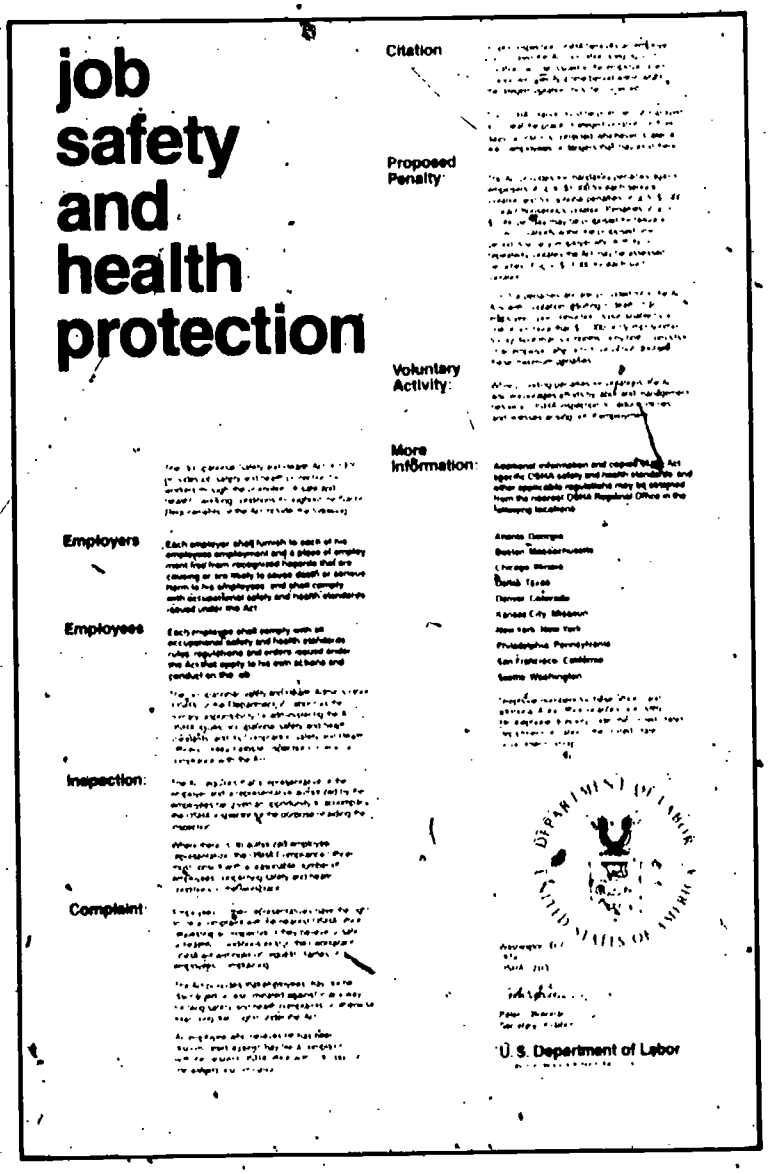
18. Name and address of physician _____
19. If hospitalized, name and address of hospital _____

Date of report _____ Prepared by _____
Official position _____

university can be treated as a single entity for reporting purposes. The annual summary can, thus, report work injuries and illnesses for that institution as a whole.

Copies of the OSHA poster outlining employee and employer rights and responsibilities under OSHA, Exhibit 14, must be displayed all year in a conspicuous place where notices to employees are customarily posted. Additional copies of both the summary report and the poster also may be displayed in departmental offices and other areas that are more convenient to employees.

Exhibit 14



job safety and health protection

Citation

Proposed Penalty

Voluntary Activity

More Information

Employers

Employees

Inspection

Complaint

U.S. Department of Labor

Classification of Recordable Injuries and Illnesses

The following types of occupational injuries and illnesses must be recorded in the basic records required by OSHA:

- fatalities,
- multiple hospital cases involving five or more persons,
- cases that result in lost workdays, and
- cases that do not result in lost workdays, but do result in:
  - the need for medical care beyond first aid,
  - transfer to another job,
  - termination of employment,
  - loss of consciousness,
  - restriction of work or motion, or
  - all other diagnosed occupational illnesses.

A guide on this recordability under OSHA is shown in Exhibit 15. Employers are responsible for deciding which injuries or illnesses are recordable. This is not always an easy decision, as will be seen by the explanations of the categories that follow below. In cases where there is uncertainty about whether the case is reportable, or exactly what type of reportable case it is, the case should be entered in the log. Cases that are later determined to be nonrecordable can be lined out, but not erased.

Also, a particular case may change as time goes on. A person who at first required only medical treatment may, in time, lose workdays. A person who at first only lost workdays may die. As the case changes, the classification must be changed on the log. Simply draw a line through the old classification and enter the new classification.

Fatalities and Multiple Hospitalization Cases

All fatalities and cases resulting in the hospitalization of 5 or more employees must be reported to the nearest OSHA area director within 48 hours. In states with approved plans, the report should be made to the state agency that has enforcement responsibility under the plan. The report may be made by telephone or telegraph rather than in writing.

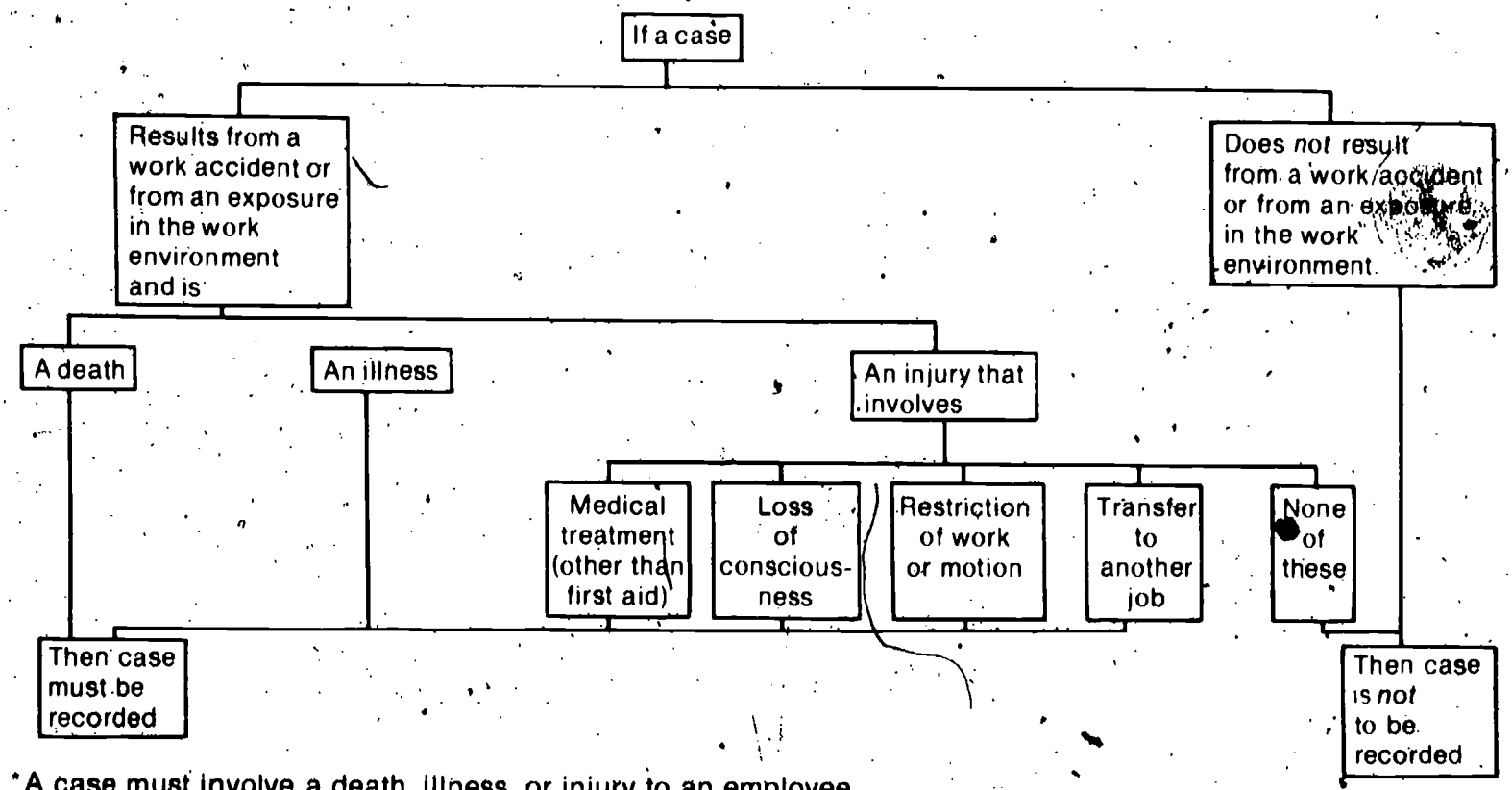
Lost Workday Cases

All occupational injuries or illnesses resulting in lost days of work must be recorded. In recording days of work lost due to an occupational injury or illness, count only the lost workdays, not calendar days. The number of workdays lost includes all those during which:

- the employee would have worked but could not,
- the employee was assigned to a temporary job while unable to perform the permanently assigned job,
- the employee worked at his/her permanently assigned job but could not perform all the functions of the job, and

Exhibit 15

GUIDE TO RECORDABILITY OF INJURY/ILLNESS CASES* UNDER OSHA



*A case must involve a death, illness, or injury to an employee.

- the employee worked at his/her permanently assigned job but could not perform the job full-time.

Many employees of educational institutions are part-time or have no regularly scheduled shifts. In these cases, the number of workdays lost must be estimated, based on prior work history and the number of days worked by personnel with the same job classification.

The employer also must use some discretion in deciding when to stop recording lost workdays. Obviously, when a person with a full-time job returns to his regular job, the recording can be terminated. For less obvious cases, BLS uses the following guidelines. If an employee is transferred to another permanent job, the recording of lost workdays may be terminated even if the employee could not perform the previous job. If the person is no longer in your employ, stop recording lost workdays. If an injured person continues on the job even though unable to do all parts of the job, the job may be redefined to exclude those portions that the employee cannot perform. In that case, discontinue counting lost workdays. The important thing in making these decisions is to act in good faith. An honest error in evaluating a case will not be held against anyone. Assistance in resolving difficult cases may be obtained from the BLS regional director or from the OSHA area director.

Medical Treatment Cases

All cases that do not involve fatalities or lost workdays but that do result in medical treatment other than first aid must be recorded. Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Thus, it goes beyond first aid treatment (such as one-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, etc.) and activities which do not ordinarily require medical care, even though provided by a physician. Interpreting the phrase "which do not ordinarily require medical care" will decide many cases.

Nonfatal Cases Without Lost Workdays

If an injury or illness results in (1) transfer to another job, (2) termination of employment, (3) loss of consciousness, or (4) restriction of work or motion, it is recordable even though no workdays are lost.

Diagnosed Occupational Illnesses

A diagnosed occupational illness reported to the employer is recordable. Such an illness must be recorded as of the date of diagnosis. However, if the diagnosis occurred after a period during which a person has been unable to perform for unknown reasons,

the date entered should be the first day on which the employee became unable to perform regular duties. Definitions of occupational illnesses can be found on the back of OSHA Form 200 (Exhibit 12, back); these are illnesses specifically due to job-related activities (versus the common cold, etc.).

There is no time limit within which an employee must report an injury or illness. When an employee does report one, however, the employer must determine whether (1) there was an injury or illness, (2) it resulted from a work related accident or incident, and (3) it is recordable. Once an employer or his designee learns of the injured or ill worker, he must decide within 6 days after receipt of the information whether or not it is a recordable case. Efficient accident reporting and investigating procedures should be initiated to avoid the late reporting of cases.

Other OSHA Recordkeeping and Reporting Requirements

In addition to occupational injury and illness records, OSHA requires employers to keep a number of other records, to conduct inspections, and to submit reports dealing with particular equipment, environmental conditions, materials, and employee exposure. Examples of the major requirements that apply to colleges and universities are listed on Exhibit 16. This list is not complete; it merely gives examples of the types of requirements listed by OSHA. Such requirements are scattered throughout the various sections of the OSHA regulations. Sometimes the requirements change as the law is amended. Employers are responsible for identifying and complying with those requirements applying to their own establishment.

Accident, Injury, and Illness Investigation and Reporting

As described in the previous section, the primary purpose of OSHA's recordkeeping requirements is to collect basic data on occupational injuries and illnesses for the Bureau of Labor Statistics. This recordkeeping can, however, become a major asset for an OSH program. An accident, injury, and illness investigation and reporting system can collect data helpful in program evaluation and improvement as well as the data required by OSHA. Such information can be used for many internal purposes, including:

- identifying and controlling potential accidents or exposures;
- indicating where changes, substitutions, or elimination of materials, methods, processes, or operations should be made;

Exhibit 16

OTHER OSHA RECORDKEEPING AND REPORTING REQUIREMENTS

ITEM	SECTION*	REQUIREMENT†
Tube and coupler scaffolds	28(c)(4)	R
Tubular welded frame scaffolds	28(d)(11)(14)	R & I
Outrigger scaffolds	28(e)(3)	R
Two-point suspension scaffold	28(g)(8)	I
Powered platform installation	66(3)(2)-(4)	I & R
Asbestos	93a(f)(1)	M
	93(a)(i)(1)	R
	(j)(6)	
Ionizing radiation	96(b)(2)(iii)	R
	96(f)(3)	I
	96(l)	N
	96(m)	REP.
	96(n)	R
	96(o)	REP.
Hydrogen	103(b)(5)	I
	(c)(5)	I
Oxygen	104(b)(10)	I
Tank storage	106(b)(5)	I
Class I liquid storage	106(g)(1)(i)(g)	R
Fixed location mixing of slurry explosives	109(h)(3)(v)(b)	I
Respirators	134(e)(2)	R
Portable fire extinguishers	157(d)(2)(i)	I
	(d)(3)(iv)	R
	(d)(4)(viii)	R
Fixed dry chemical system	160(c)(1)	I & R
Carbon dioxide system	161(b)(1)	I
Arc welding	252(b)(4)(ix)	I

*From 29 Code of Federal Regulations, Part 1910.

†KEY: R=Records; I=Inspections; Rep=Reports; M=Medical surveillance; N=Notification of incidents (exposure of over 25 rems)

- identifying campus-wide trends in the severity of injuries and illnesses, types of injuries, volume of property damage, location of accidents, causes of accidents, etc.;
- providing safety performance information to work groups, enabling them to compare their present performance with their own past performance and with that of other work groups;
- justifying program expenditures to the administration by documenting program accomplishments;

- identifying group and individual training needs;
- serving as a basis for award and incentive programs to motivate and stimulate employee cooperation with the OSH program; and
- developing defenses for the institution against court actions.

The following discussion describes the steps involved in developing and maintaining an effective accident, injury, and illness investigation and reporting system. An effective system can be instrumental in reducing the number and severity of incidents by being used to uncover their causes; initiate corrective actions to prevent them from occurring in the future, and increase supervisor involvement in the OSH program. The system is based on understanding and following through on three basic principles of such investigations.

The first principle is to investigate all incidents, including those that result only in first aid type injuries or only in property damage. Any accident, no matter how serious or trivial, should be reported and investigated because it may point to hazardous conditions or practices that could lead to future, more serious incidents. Moreover, heavy property damage and other costs to the institution often result, even though no employees are affected. Because one of the goals of any OSH program is to save money, even minor accidents should be reported.

The second principle is that the reporting system must be easy to use. The proposed system, therefore, uses only one form to collect all the information needed.

The third principle is to remember that the key person in any accident, injury, and illness prevention program is the supervisor. For the OSH program to be successful, it must have the full cooperation and support of each supervisor. Therefore, all efforts by the OSH Program Director and staff should be conducted in conjunction with the supervisors. The supervisor generally is responsible for conducting the initial investigation and filling out the reporting form for any employee.

Developing an Accident, Injury, and Illness Investigation and Reporting Form

The first step in setting up this recordkeeping system is designing the investigation and reporting form. Because this will be the basis for the entire system, care must be taken to collect all necessary information, using a form that supervisors will be able to complete with a minimum of effort.

The reporting form should be analyzed to make sure that it collects all the information required by OSHA and the state worker's compensation form. In addition, the form should collect all other information necessary for any internal reports required by the OSH pro-

gram. It is advisable to develop the tables on which the summary data will be displayed before completing the reporting form to ascertain that no essential data were omitted.

Finally, the accident, injury, and illness investigation and reporting form should include space for the supervisor's analysis of the causes of the incident, covering all information regarding the affected person (what the person was supposed to be doing; what the person actually was doing; and the person's training, past performance, and accident records). The supervisor's information gathered from an examination or inspection of the equipment being used and the physical environment at the time is to be included. The supervisor should also recommend the steps to be taken to prevent similar incidents. In this manner, the investigation and reporting form aids in examining the causes of the incident more closely and in considering the follow-up action to be taken.

An example of this type of investigation and reporting form is presented in Exhibit 17. Whatever form is used, it must be explained to all persons who might be called upon to use it.

Investigating Incidents

As mentioned above, the Program Director provides guidance, but the immediate supervisor, dealing directly with employees, is a key person in any OSH program. Therefore, the supervisor bears primary responsibility for ensuring that the work environment is hazard free and that employees are adequately trained in safe working procedures. The supervisor must be relied upon to enforce, on a daily basis, any efforts initiated by the OSH program staff. This includes accident, injury, and illness investigation and reporting.

In the case of an accident, the supervisor is the person at the scene and is also the person with the most knowledge about the work environment and the employee(s) involved. Therefore, the employee's supervisor is best qualified to perform the initial investigation and to fill out the reporting form.

Thus, the supervisor must not only be thoroughly familiar with the reporting system but must also be indoctrinated by the OSH program staff on the need to report all incidents. The most important part of the supervisor's reporting duties is investigating the incident. The supervisor must be trained to get the answers to two questions: (1) What happened to cause the accident, injury, or illness? and (2) What can be done to prevent it from happening again? To answer these questions, the supervisor should be instructed to follow the procedures outlined below during the investigation:

- Check the site and circumstances of the incident as thoroughly as possible before anything has been changed. Look for clues, and investigate each one.

Exhibit 17

FACULTY/STAFF ACCIDENT REPORT

1 Name | 2 Social Security Number | 3 Department | 4 Phone

5 Job Title | 6 Length of Employment (Month, Year) | 7 Age of Employee (Male, Female) | 8 Date/Time of Accident

9 Details of accident (what was employee doing when injured, how did the injury happen?)

10 Cause of Accident
Indicate below by an X whether the accident was caused by

A Unsafe conditions

- Improper guarding or protection
- Defective tools, substances or equipment
- Hazardous arrangement, congestion
- Improper illumination
- Improper ventilation
- Slip and fall hazard
- Improper dress, apparel
- Fire hazard
- Hazardous atmospheric conditions, gases, fumes, vapors
- Radiation exposure
- No mechanical cause
- Not listed (describe briefly)

B Unsafe acts

- Operating without authority
- Failure to secure or warn
- Working at improper speed
- Bypassed safety device
- Used defective equipment
- Used hands instead of equipment
- Improper lifting
- Failure to use personal protective equipment
- Used improper equipment
- Improper loading, mixing, etc.
- Took unsafe position
- Servicing equipment while in motion
- Distracting, teasing
- No unsafe act
- Not listed (describe briefly)

11 *Location (where did accident occur, in building, specify whether in lab, office, hall, room number, etc.)

12 Loss of work time: hours, days

13 Loss severity potential: high, medium, low

14 Probable recurrency rate: high, medium, low*

15 Nature of injury

- hernia
- abrasion
- amputation
- burn, chemical
- burn, other
- contusion (bruise)
- dislocation
- fracture
- foreign body
- radiation exposure
- infection secondary
- intoxication, chemical
- intoxication, other
- laceration
- puncture
- shock, electric
- sprain
- strain
- other (specify)

16 Part of body injured

- skull
- face
- eye
- mouth
- nose
- jaw
- neck
- arm, upper
- elbow
- wrist
- hand
- finger
- back
- chest
- shoulder
- abdomen
- thigh
- knee
- leg, lower
- ankle
- foot
- toe
- other (specify)

17 What medical treatment did the injured person receive?

18 [illegible] been taken to correct this hazard?
no
if yes [illegible] on reverse side.

19 Do you have any recommendations that you feel need to be reviewed by management for implementation?

20 Supervisor's name
Phone
Date

Safety form #6 A
Revised 2-76

*University of Georgia

- Discuss the incident with the person(s) affected: this is usually the principal source of information. Wait, however, until first aid or medical treatment has been given. Do not unnecessarily upset that person. Always put the injured's welfare first.
- Talk with the people who saw the accident and those familiar with the conditions immediately before and after.

Dig for the information. The smallest detail may point to the real cause.

- Reconstruct the events leading to the incident. Consider all of the possible causes. Evaluate the unsafe acts and unsafe conditions that separately or in combination were contributing factors.
- Determine the most probable cause of the accident. Contact the OSH program staff to provide help in doing this, if help is needed.
- Be objective throughout the investigation. Its purpose is to identify and correct the problem—not to place the blame or embarrass anyone.

As soon as possible, the results of this investigation should be used to eliminate or control the conditions that caused the accident, injury, or illness. To do this, the OSH Program Director and staff should instruct the supervisor to take the following actions:

- If employee failure was involved, be sure that the employee is properly instructed and that the instructions are followed. Also, all employees involved in similar operations should receive the same instructions.
- Where the operation can be changed to eliminate the hazard, make the change if it is within the supervisor's authority to do so. If it exceeds his/her authority, recommend appropriate action to the administration and to the OSH program staff.
- When equipment changes or guards are necessary, decide exactly what is needed. Then discuss it with the administration and with the OSH program staff.
- Make a written report of findings, the action taken, and recommendations to the administration and to the OSH program staff. Use accident, injury, and illness investigation forms if they are available. If not, simply write a memo.

Analyzing Accident, Injury, and Illness Report Form

After the supervisor has completed the initial investigation and filled out the investigation and reporting form, the form should be forwarded to the OSH program staff for processing and analysis. The OSH staff should be responsible for determining whether the incident is reportable to OSHA or to the state worker's compensation office. If so, the OSH staff will extract the necessary information from the report.

The OSH program staff also should review that portion of the form describing the incident, its causes, and the control measures that were instituted or recommended by the supervisor to prevent a similar incident. If the investigation, actions, and report filed by the supervisor are deemed to be adequate and do not indicate serious

future hazards, the OSH program staff could simply code the information for use in various internal summary reports.

If the report is inadequate concerning the causes identified or the control measures instituted or recommended by the supervisor, the OSH staff could provide additional information on safety and health procedures. On the other hand, if anything about the accident, injury, and illness report indicates that, under similar or slightly different circumstances, serious injury or property damage could result, the OSH staff could initiate immediate remedial action. This includes near misses where no injury occurred or illness resulted and incidents in which a person received only a minor injury. Such accidents should be investigated by the OSH program staff immediately and thoroughly to make sure that proper controls are instituted to prevent a more serious occurrence.

Monitoring and Evaluation of Program Activities

Monitoring is the day-to-day review of program activities to determine the extent to which progress is being made toward meeting program objectives. The purpose of monitoring is to identify actual and potential problems early so corrective action can be taken. Evaluation, on the other hand, is the periodic review of the direction, effectiveness, and efficiency of a program.

Thus far, this chapter has discussed the major OSH program functions of conducting inspections; investigating accidents, injuries, and illnesses; controlling hazards; developing written rules and regulations; providing training to campus employees; and keeping required records. This final section discusses monitoring these major program functions and evaluating the program's progress. At all times, the program's overall objective of reducing the number and severity of occupational illnesses and injuries on campus and its specific goals of reducing or eliminating hazards should be considered. This section also discusses methods for proving the cost effectiveness of an OSH program.

Monitoring Routine Program Activities

The OSH Program Director is responsible for monitoring the routine activities of the OSH program to make sure they are carried out as planned. This is an important function of a successful program because it is quite easy for OSH program staff and other campus personnel to let projects slide if no one is concerned enough to check the program's status.

Specifically, monitoring should ensure that the following activities are performed:

- Routine inspections of work areas and equipment conducted at the agreed-upon frequencies;

- Reinspections conducted to check progress toward compliance in areas where violations were uncovered;
- All accidents and incidents investigated thoroughly and reported in writing;
- OSH training given to employees when hired and as needed thereafter;
- Rules and regulations updated to encompass new campus activities and changes in the requirements;
- Required records kept up-to-date and accurate;
- Each new employee provided a preemployment medical examination and periodic examinations selectively applied later as needed;
- Exposure levels for radiation and other industrial hygiene hazards checked periodically;
- Regular OSH committee meetings held; and
- Other activities to be carried out conducted in a timely fashion.

Merely monitoring some activities may be sufficient to keep them on schedule. Other activities may prove to be chronically behind schedule or inadequately performed. This calls for reassessment on the part of the Program Director.

Appropriate remedial action follows naturally from a clear understanding of why the problem exists. Therefore, the Program Director should devote his attention to uncovering the reason(s) for the problem. The problem may be one of administration, such as the assignment of responsibility being unclear. On the other hand, it may be a staffing problem, such as a secretary being assigned a task that requires directing the activities of department heads, or the chairman of an OSH committee being so disliked personally by the members of the committee that the meetings are unproductive. The problem may be due to inadequate training so that the person assigned the responsibility for the task does not understand it adequately. The problem also may be that the task is structured or scheduled in such a way that it cannot be accomplished at all or can be accomplished only with great difficulty. There are infinite reasons why a problem exists and work is not performed satisfactorily. Once the Program Director uncovers the reasons, appropriate corrective action can then be taken.

Needless to say, a Program Director capable of objective self-examination can use the monitoring information most effectively. In monitoring the progress of program activities, it may be discovered that a past decision is causing problems. In such a case, the Program Director must be willing to reverse that decision if the OSH program is to stay on track. Sometimes, monitoring may point out the need to take a hard look at program objectives and, possibly, to change them.

Using Illness/Injury Data to Evaluate the Program

Data on occupational illnesses and injuries can provide valuable feedback for the OSH program. They are a direct measure of the program's success or failure in achieving its overall objective—a reduction in the number and severity of occupational illnesses and injuries. The section on Accident, Injury, and Illness Investigation and Reporting in this chapter describes an internal system for collecting these data. Data collected by such a system can be used to develop summary reports that compare the present OSH situation with the situation in the past. Such reports can be invaluable in pointing out areas of program success or failure. Some possible breakdowns useful in developing these reports are by:

- department or college,
- campus,
- cost to the institution,
- type of activity (e.g., sports, research, pedestrian),
- part of the body injured,
- severity of injury,
- property loss,
- type of worker injured (e.g., clerical, custodial, laboratory),
- accident type (e.g., cut, sprain, fracture),
- work time lost, and
- severity of hazards detected or corrected.

These data can be used to evaluate the program and to plan for improved program effectiveness. They can also be used to help obtain more money for an effective OSH program. This latter point is discussed in some detail below.

Assessing the Cost Effectiveness of the Program

As mentioned in Chapter II, obtaining adequate funds is a serious concern for most OSH programs. Due to limited funds, difficult choices must be made. Data from an accurate recordkeeping system can be helpful in allocating resources to the areas that present the most serious injury and illness hazards.

These data can also be used in efforts to obtain more money. Before budgeting large sums of money for OSH activities, most administrators need to be convinced that the OSH program is producing enough benefits to merit the expenditures requested. Summary tables comparing past and present performance can be very persuasive in proving the program's effectiveness in reducing the number and severity of injuries and illnesses. These data can be subjected to sophisticated statistical analysis to add further weight to the arguments presented. Such data also can be used to justify increased expenditures in problem areas.

*See, for example, Petersen, D. Techniques of Safety Management. McGraw-Hill, New York. 1971. pp. 67-81.

The additional step of converting reductions in the volume and severity of accidents to dollars saved can result in the most convincing argument of all. It may not be necessary or possible to prove that every dollar spent on the OSH program results in a dollar saved on the direct and indirect costs of occupational injuries and illnesses. However, it certainly does not hurt the OSH program's funding prospects to prove that sizeable amounts are being saved now that would have been wasted if past trends had continued.

Accidents result in both direct and indirect costs. Direct or insured costs include payments for worker's compensation, liability, and other types of insurance necessitated by accidents. If the school is partially or totally self-insured, the costs of all medical compensation and liability payments made by the school are direct costs. Generally, data on direct costs can be obtained readily from campus records.

Indirect or uninsured costs are more difficult to estimate. Indirect costs due to these incidents include a number of factors.*

- costs of wages paid for working time lost by workers who were not insured;
- net cost to repair, replace, or restore material that was damaged;
- cost of wages paid for working time lost by injured workers in excess of worker's compensation payments;
- extra cost due to overtime work necessitated by the incident;
- cost of wages paid to supervisors due to activities necessitated by the incident;
- wage costs due to decreased output by injured worker after return to work;
- cost of training of a new worker;
- uninsured medical costs borne by the institution;
- cost due to time spent by supervisory and clerical workers on investigations or in processing compensation application forms; and
- miscellaneous costs such as rental of replacement equipment and other costs unique to the individual incident.

Obviously, estimating indirect costs is a big task and one that could not be undertaken in every case. A number of shortcuts are, however, available.

Some employers simply estimate that the indirect costs are four times greater than the direct costs of incidents. This method is easy, but the results are highly unreliable.

A more reliable method was developed by Simonds and Grimaldi†

*Simons, R. H., and J. Grimaldi, Safety Management. Richard R. Irwin, Homewood, Illinois, 1963. pp. 84-91.

†*Ibid.*, pp. 103-132.

ERIC

with the support of the National Safety Council. This statistically valid system results in estimates of the direct and indirect costs associated with each of the following types of accidents—lost time, medical treatment, first aid, and property damage only. The cost estimates are generated through a pilot study at your institution; therefore, the costs are geared to your institution. This system requires some start-up investment in time and manpower. Once it is established, though, accurate cost estimates can be generated with little trouble. The only adjustments required to maintain the accuracy of the system are those resulting from inflation.

A somewhat less accurate (because it estimates costs for various types of accidents based on national averages) and less comprehensive method is described by Petersen.* Depending on circumstances, you may be willing to sacrifice some accuracy to avoid the work and cost involved in doing the pilot study.

These then are three methods that can be used to estimate the cost of accidents. If you decide to use either of the last two methods, full explanations are given in the sources cited.

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*Petersen, *op. cit.*, Chapter 5.

CHAPTER IV. SOURCES OF INFORMATION

The person responsible for the campus OSH program needs to know where to go for help in setting up and maintaining the program. Although there are a variety of sources of information, there are only a few good technical sources. The sources listed in this chapter are not only informative, but also specifically applicable to campus OSH programs.

When setting up an OSH program, someone who has already been involved in a campus OSH program is a good source for general information. Program Directors at major universities are excellent contacts, and they usually are willing to help in establishing new programs. They have had direct experience in applying OSH program concepts in a campus setting, and their guidance should be helpful. The Coordinating Committee for Environmental Health and Safety on College and University Campuses, which consists of OSH Program Directors, is an organization with representatives from various associations that have an interest in campus OSH programs. Associations belonging to this particular committee are discussed below.

Many of the various professional associations offer certain benefits to their members that might be helpful for a campus program. In addition to associations, private companies offer consulting services and government agencies and clearinghouses offer lists of publications available in any field of interest. At the end of this chapter, selected, recommended publications applicable to the program elements covered in this manual are listed.

Associations and Organizations

A variety of associations related to the field of occupational safety and health offer aid and membership to universities and colleges. The following associations, with representatives on the Coordinating Committee for Environmental Health and Safety on College and University Campuses, are probably most interested in helping campus OSH programs:

- Campus Safety Association
- American College Health Association
- American Industrial Hygiene Association

- National Environmental Health Association
- American Public Health Association
- American Occupational Medical Association
- Campus Radiation Safety Officers' Conference

The first two associations in this group will supply names of consultants who already have set up campus OSH programs.

Other associations can be helpful in specific safety or health areas, such as fire protection; some of these major associations are also discussed below.

Campus Safety Association
444 North Michigan Avenue
Chicago, Illinois 60611

The Campus Safety Association, sponsored by the National Safety Council, consists of people who are active in campus OSH programs. This organization will recommend consultants, who have functioned as Campus Program Directors, to help in setting up new OSH programs. They also will suggest appropriate resource material. In addition, various committees have been organized to examine specific health and safety problems, such as laboratory safety and fire safety. A national 3-day conference on campus safety is held each year, and monographs of these conferences are published. The Campus Safety Newsletter is available both to members and nonmembers for a nominal fee.

American College Health Association (ACHA)
2807 Central Street
Evanston, Illinois 60201

ACHA is a clearinghouse for health information. Although ACHA's major focus is on health activities, it does have a section devoted to campus OSH programs, called Environmental Health and Safety. There are three types of membership: institutional, individual, and associate. Any college or university can become an institutional member, with the OSH Program Director being the institution's representative. Individual members usually are health professionals working in college and university health fields. Members of the profession who are not associated with an institution of higher education can become associate members.

ACHA can be used as a resource for guidelines and standards in setting up campus OSH programs. Upon request, a survey team, consisting of two or three consultants, can visit the institution, evaluate the OSH program, make recommendations, and, as the case may be, certify that the institution's OSH program meets ACHA standards. Specific plans and models that various colleges and universities have used in setting up such a program are available. Not only does this association aid in setting up a program, but it also will help to keep it operational.

Annual meetings are held, which include problem-oriented sessions and speakers on various topics. New members receive a list of articles and brochures published by the association, a number of which are on student health services and emergency disaster plans.

Two specific ACHA texts of interest are "Recommended Standards and Practices for College Health Programs" and "Development of Health Programs for Junior and Community Colleges." In addition, legislative information related to health activities is kept current and available for institutional use. Members get a newsletter and various mailings from time to time.

American Industrial Hygiene Association (AIHA)
475 Wolf Ledges Parkway
Akron, Ohio 44311

This professional society of industrial hygienists offers training courses and a technical manual in the field of industrial hygiene. A monthly journal, "American Industrial Hygiene Journal," is available to both members and nonmembers on a subscription basis. The newsletter "American Industrial Hygiene Association" is published bimonthly and distributed to all members.

National Environmental Health Association (NEHA)
1600 Pennsylvania
Denver, Colorado 80203

NEHA is an association of sanitarians who work in environmental health fields, including state and local health departments, hospitals, and university and college campuses. The sanitarian on campus is usually concerned with such matters as food service, solid waste, and safety. NEHA accredits colleges and universities that offer courses in environmental health and runs a National Registration Service for sanitarians. The association also promotes internship programs for students.

NEHA holds an annual conference; works closely with legislators to facilitate the exchange of information among its members; and bi-monthly publishes the "Journal of Environmental Health."

American Public Health Association (APHA)
1015 18th Street, N.W.
Washington, D.C. 20036

The American Public Health Association is a professional organization with different areas of expertise including an occupational safety and health section and a radiation health section. Anyone interested in public health can be a member. The association plans special projects, has a clearinghouse of reference materials, and can locate experts for people on an informal basis as needed. Communication and exchange of information is en-

couraged by forums, workshops, and periodic meetings. APHA publishes the "American Journal of Public Health," free to members and on sale to nonmembers. A newsletter is published three times a year.

American Occupational Medical Association (AOMA)
150 North Wacker Drive
Chicago, Illinois 60606

AOMA is oriented toward educating physicians in developing their skills in the field of occupational health. The association accepts memberships only from physicians and only individual memberships are granted. AOMA publishes "The Journal of Occupational Medicine" monthly and also distributes a newsletter to its members.

Campus Radiation Safety Officers' Conference

This association of campus radiation safety officers holds a major conference every 2 years, the proceedings of which are published. The group's coordinator is located at the California Institute of Technology, Pasadena, California.

Health Physics Society (HPS)
4720 Montgomery Lane, Suite 506
Bethesda, Maryland 20014

HPS's membership is devoted to the science of protecting mankind and the environment from unwanted radiation exposure. They present annual technical meetings and midyear topical symposia and publish a monthly journal, "Health Physics." The American Board of Health Physics certifies health physicists by examination.

American Society of Safety Engineers (ASSE)
850 Busse Highway
Park Ridge, Illinois 60068

The purpose of this association is to maintain a high level of knowledge and competence in the safety profession. To become a member, one must be working as a safety professional—for factories, mines, insurance companies, or governmental and educational institutes. Hence, the focus is on a specific profession rather than on a specific industry or safety component.

The society conducts educational programs and holds conferences. It publishes a monthly magazine and a "Consultant Directory," which lists people in the field who have expertise in various areas of safety.

ERIC

National Association of College and University Business Officers (NACUBO)
One Dupont Circle, Suite 510
Washington, D.C. 20036

NACUBO is an association whose membership is reserved to business officers of accredited colleges and universities. As an organization of business officers, it deals mostly with financial matters and assists colleges and universities in setting up any kind of program or department, not necessarily one in occupational safety and health. A committee examines OSH legislation and its impact on institutions. Books on business administration and government contracts and grants are available to members; a newsletter is published.

Association of Physical Plant Administrators of Universities and Colleges (APPAUC)
11 Dupont Circle, Suite 250
Washington, D.C. 20036

APPAUC is a membership organization for colleges and universities whose focus is on physical plant administrators—usually engineers in charge of maintaining the campus buildings, grounds, heating, and electricity. Members of APPAUC are the colleges and universities; their representatives are the Physical Plant Directors. The Physical Plant Director may or may not have the OSH program under his jurisdiction; however, safety procedures are discussed. Seminars and workshops are held periodically. A file of consulting experts on safety is available to an institution for a fee. The consultants are private firms or retired Physical Plant Directors. The association publishes a newsletter, "Safety Tips," and other articles on campus safety.

National Fire Protection Association (NFPA)
470 Atlantic Avenue
Boston, Massachusetts 02110

This nonprofit organization studies and reports information for the purpose of fire prevention. Anyone can be a member, and receive a catalogue of all of the publications available on fire safety. This association is responsible for writing the codes and standards on fire safety. Fires are researched both for the association's own purposes and for federal agencies, nursing homes, or anyone on a contract basis.

NFPA has posters and pamphlets on general fire safety, which are available to the public. Fire safety seminars are conducted, and lecturers are available for a fee. Films (technical and general) on such subjects as home fire safety, fire department training, and high-rise building fire safety are for sale.

A number of magazines are published: "Fire Technology," a scientific magazine designed for fire prevention engineers; "Fire Journal," a bimonthly magazine designed for firemen and fire marshals that deals with statistics, fire reports, new techniques, and all "free services" in general; "Fire Command," a monthly magazine geared to fire administrators and professionals, but available to members and nonmembers by subscription, with features and articles on the technical aspects of the various fire standards.

University Risk Management Insurance Association

This is an association of college and university representatives who work on insurance matters. There are only institutional memberships, and any institution can be a member. Member delegates are designated from those responsible for risk management and insurance. This association is concerned with insurance problems and specific concerns affecting risk such as design of handrails and guardrails. An annual conference is held, and a newsletter is published.

International Association of College and University Security Directors
c/o James L. McGovern
P.O. Box 98127
Atlanta, Georgia 30329

The membership of this association is limited to directors of security departments or law professors. The areas of interest on campus are parking, locking doors, and resident safety. There are courses and seminars throughout the year, as well as an annual convention. A bimonthly journal, "Campus Law Enforcement Journal," is available.

Private Companies

A number of private consulting firms can offer assistance in setting up a formal OSH program. (No specific recomendations are given here.) Exercise caution and care in deciding what type of technical expertise is needed, who is best qualified to offer this expertise, and what can be afforded. Although some campus officials believe that these consultants are so "industry" oriented that they cannot be useful in consulting with a university or college on its OSH program, this depends upon the consultant. For technical matters, particularly regarding the handling of OSHA standards, private consultants are extremely helpful in instructing schools on proper inspection techniques and on assuring a campus of being in compliance.

Insurance companies also can be considered as a source of some assistance and information for campus OSH Program Directors. An

insurance representative is usually sent out to the campus to inspect the area before the insurance policy is issued. At the same time, he can make recommendations as to where potential hazards exist and how to improve working conditions. Sometimes an agent can send a specialist to the campus for purposes of inspection and consultation. The specialist may be an expert in fire protection, occupational safety, or environmental health. The fee for such a service is usually built into the premium. Caution must also be exercised in relying on the advice of an insurance agent; because an insurance agent's orientation is toward the insurance aspects, not OSHA compliance or general safety procedures, some insurance consultants may overlook areas that should be considered in a campus OSH program. In addition to consultation, insurance companies provide a variety of films, pamphlets, and brochures on safety and health topics.

Clearinghouses

With the exception of some of the associations, such as the American College Health Association and the Campus Safety Association, there are no clearinghouses for information specifically and exclusively on campus occupational safety and health.

There are, however, clearinghouses that can be used to cover specific technical information that could be of value to Program Directors. Three such clearinghouses are described below.

National Library of Medicine—Tox Line

This is a computer-based file, rather than a clearinghouse, per se. Tox Line has everything from abstracts to original articles on such topics as drugs, chemicals, pesticides, and environmental pollutants. Information can be obtained on a walk-in basis at the nearest medical library; by contacting the Toxicology Information Response Center, Oak Ridge National Laboratory, P.O. Box X, Oak Ridge, Tennessee, or by calling their Washington, D. C. number: (202) 496-1131.

National Institute for Occupational Safety and Health Technical Information Center (NIOSHTIC)

This center has a small office in Washington, D.C., with the main office in Cincinnati, Ohio. For information write the Robert A. Taft Laboratories, NIOSH; 4676 Columbia Parkway, Cincinnati, Ohio 45226, or phone (513) 684-8323. Information on safety and health in the working environment can be obtained at this center. There is a current publication list, criteria documents (work standards), and technical publications.

Educational Resource Information Center (ERIC)

ERIC is part of NIE (National Institute of Education) and is a central gathering place for education materials. Over 600 libraries

(including campus libraries) have microfiche of their information. Monthly, ERIC publishes "Resources in Education," which is indexed by subject matter and describes what publications, including educational publications on health and safety, can be obtained. For the Index to Resources in Education, write the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.

Government Agencies

Two federal agencies are directly involved with OSH activities: the U.S. Department of Health, Education, and Welfare's National Institute for Occupational Safety and Health (NIOSH) and the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA).

NIOSH, located in Rockville, Maryland, Morgantown, West Virginia, and Cincinnati, Ohio, offers various training materials. It would be beneficial to be placed on the NIOSH mailing list for its publications (e.g. criteria documents, health and safety guides). Although not a primary function, NIOSH will, from time to time, offer consultation services on OSH programs in addition to its legally mandated health hazard evaluations. Such consultation would be on an informal basis.

OSHA, located in Washington, D.C., offers brochures on various aspects of materials published in the Federal Register, training and recordkeeping requirements, and specific regulations. Their publications list can be obtained from the OSHA Regional Offices.

If your state has a state plan, write to your state occupational safety and health agency. They can supply helpful information of OSH regulations.

NIOSH AND OSHA Regional Offices

The following NIOSH and OSHA regional offices can provide information on the Occupational Safety and Health Act including questions on standards interpretations and voluntary compliance information, as well as copies of the OSHA Standards, the Act, Employee Rights Posting Notice, and publications.

NIOSH REGIONAL OFFICES

DHEW, Region I (CT, ME, MA, NH, RI, VT)
Government Center (JFK Federal Building)
Boston, MA 02203
Tel.: 617/223-6668/9

DHEW, Region II (NJ, NY, PR, VI)
26 Federal Plaza
New York, NY 10007
Tel.: 212/264-2485/8

DHEW, Region III (DE, DC, MD, PA, VA, WV)
3525 Market Street, P.O. Box 13716
Philadelphia, PA 19101
Tel.: 215/596-6716

DHEW, Region IV (AL, FL, GA, KY, MS, NC, SC, TN)
101 Marietta Tower, Suite 502B
Atlanta, GA 30323
Tel.: 404/221-2396

DHEW, Region V (IL, IN, MI, MN, OH, WI)
300 South Wacker Drive
Chicago, IL 60606
Tel.: 312/886-3881

DHEW, Region VI (AR, LA, NM, OK, TX)
1200 Main Tower Building, Room 1700-A
Dallas, TX 75202
Tel.: 214/655-3081

DHEW, Region VII (IA, KS, MO, NE)
601 East 12th Street
Kansas City, MO 64106
Tel.: 816/374-5332

DHEW, Region VIII (CO, MT, ND, SD, UT, WY)
11037 Federal Building
Denver, CO 80294
Tel.: 303/837-3979

DHEW, Region IX (AZ, CA, HI, NV)
50 United Nations Plaza
San Francisco, CA 94102
Tel.: 415/556-3781

DHEW, Region X (AK, ID, OR, WA)
1321 Second Avenue (Arcade Building),
Mail Stop 502
Seattle, WA 98101
Tel.: 206/442-0530

OSHA REGIONAL OFFICES
(States in Regions are the same as above)

OSHA, Region I
JFK Building, Room 1804
Boston, MA 02203
Tel.: 617/223-6712/3

OSHA, Region II
1515 Broadway (1 Astor Plaza), Room 3445
New York, NY 10036
Tel.: 212/971-5941/2

OSHA, Region III
15220 Gateway Center, 3535 Market Street
Philadelphia, PA 19104
Tel.: 215/596-1201

OSHA, Region IV
1375 Peachtree Street, N.E., Suite 587
Atlanta, GA 30309
Tel.: 404/526-3573/4 or 2281/2

OSHA Region V
230 S. Dearborn, 32nd Floor
Chicago, IL 60604
Tel.: 312/353-4716/7

OSHA, Region VI
555 Griffin Square Building, Room 602
Dallas, TX 75202
Tel.: 214/749-2477/8/9 or 2567

OSHA, Region VII
Federal Building, Room 3000, 911 Walnut Street
Kansas City, MO 64106
Tel.: 816/374-5861

OSHA, Region VIII
Federal Building, Room 15010, 1961 Stout Street
Denver, GO 80202
Tel.: 303/837-3883

OSHA, Region IX
9470 Federal Building, 450 Golden Gate Avenue
Post Office Box 36017
San Francisco, CA 94102
Tel.: 415/556-0584

OSHA, Region X
6048 Federal Office Building, 909 First Avenue
Seattle, WA 98174
Tel.: 206/442-5930

Educational Resource Centers

NIOSH has funded the following schools, colleges, and universities for the purpose of developing educational programs for occupational health specialists.

The University of Texas Health Science Center
P.O. Box 20186
Houston, TX 77025
(713) 792-4300

ERIC

The Johns Hopkins University
School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, MD 21205
(301) 935-3720 or 3537

Department of Environmental Sciences and Engineering
School of Public Health
University of North Carolina
Chapel Hill, NC 27514
(919) 966-1023

Department of Environmental Health
University of Washington
Seattle, WA 98195
(206) 543-6991

Department of Environmental Health
University of Cincinnati
College of Medicine
3223 Eden Avenue
Cincinnati, OH 45267
(513) 872-5701

Harvard University
School of Public Health
665 Huntington Avenue
Boston, MA 02115
(617) 732-1260

University of Minnesota
School of Public Health
420 Delaware Street, S.E.
Minneapolis, MN 55455
(612) 373-8080

Department of Family & Community Medicine
University of Arizona Health Sciences Center
Tucson, AZ 85724
(602) 882-6244

School of Public Health
University of Illinois at the Medical Center
P.O. Box 6998
Chicago, IL 60680
(312) 996-7811

University of Utah
Medical Center
Room BC 106 DFCM
Salt Lake City, UT 84132
(801) 581-8719

Mt. Sinai School of Medicine
1 Gustave Levy Place
New York, NY 10029
(212) 650-6174

Bibliography of Selected Publications

The following published works may be helpful as sources of guidance and technical information for campus OSH programs. The publications have been organized by subject to facilitate location of works for a specific area.

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Accident Investigation and Prevention

Association of General Contractors of America. 1971. Manual of accident prevention in construction. Sixth edition. Association of General Contractors of America, Washington, DC.

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Colling, R.L. 1970. Hospital security and safety journal articles; a collection of current articles related to security and safety in health care institutions. Medical Examinations Publication Co., Flushing, NY.

Gilmore, C. 1970. Accident prevention and loss control. American Management Association, New York, NY.

National Safety Council. 1974. Accident prevention manual for industrial operations. Seventh edition. National Safety Council, Chicago, IL.

Recordkeeping Requirements

National Safety Council. 1973. Accident facts. National Safety Council, Chicago, IL.

U.S. Department of Labor, Bureau of Labor Statistics. 1974. Occupational injuries and illness in the United States by industry, 1973. Bulletin 1874. Washington, DC.

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GLOSSARY

ACT: The Occupational Safety and Health Act of 1970 that requires employers to provide work places free from recognized hazards that are causing or likely to cause death or serious physical harm.

ABATEMENT PROCEDURES: Measures designed to control or eliminate hazards; corrective actions.

CAMPUS: The facilities associated with a college or university. In a multi-campus school, such as the University of California, this would refer to the facilities associated with one major unit such as the University of California at Los Angeles (UCLA) rather than the entire university.

CORRECTIVE ACTION PLAN: A written presentation of the corrective action that will be undertaken during a stated time frame. See Exhibit 7.

CORRECTIVE ACTIONS: Program activities designed to remedy the violations and hazards that were identified through inspections, accident investigations, or other means.

EMPLOYEE: A person hired by a college or university to work for wages or salary, either full-time or part-time. Faculty and students who work full- or part-time are included under this term.

EMPLOYER: A college or university that hires one or more persons to work for wages or salary.

EVALUATION: The periodic review of the direction, effectiveness, and efficiency of a program.

FIRST AID: One-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, etc., that do not ordinarily require medical care—even though provided by a physician.

HIGH POTENTIAL ACCIDENT: An accident in which, under similar or slightly different circumstances, serious injury or serious property damage could result.

HIGH RISK ENVIRONMENT: An area in which there are a large number or variety of serious hazards present.

IMMINENT DANGER VIOLATIONS: Existing dangers that could reasonably be expected to cause death or serious physical harm.

INSTITUTION: Any educational institution offering courses above the high school level, which may or may not lead to a degree.

This includes colleges, universities, community or junior colleges, and vocational schools.

JOB SAFETY ANALYSIS: A special technique for identifying and developing measures to control the hazards inherent in a specific job. See Exhibit 8.

LOCK-OUT PROCEDURES: Procedures for disconnecting or de-energizing machinery to ensure safety during repair and maintenance.

LOG OF OCCUPATIONAL INJURIES AND ILLNESSES: Required OSHA-200 form for classifying occupational injuries and illnesses on which is noted the extent and outcome of each case. A recordable case must be entered on the log.

MONITORING: The day-to-day review of program activities to determine the extent to which progress is being made toward meeting program objectives.

NIOSH: National Institute for Occupational Safety and Health, (U.S. Department of Health, Education, and Welfare).

NONSERIOUS VIOLATIONS: Unsafe conditions or acts that probably would not cause death or serious physical harm but would have a direct or immediate relationship to the safety and health of employees.

OSH: Acronym for the generic phrase occupational safety and health; it need not necessarily have a direct relationship to OSHA.

OSHA: Occupational Safety and Health Administration (U.S. Department of Labor).

OSHA REVIEW COMMISSION: An independent agency whose members are appointed by the President. Its purpose is to adjudicate disputes between an employer and an employee or the Secretary of Labor.

OSH PROGRAM STAFF: The full-time, or collateral personnel, or both who have OSH responsibilities and who report to the Program Director.

PROGRAM ADMINISTRATOR: The high-level administrator who is responsible for overseeing the OSH program. The Program Director reports to the program administrator.

PROGRAM DIRECTOR: The person responsible for coordinating all OSH program activities.

RECORDABLE INJURY/ILLNESS: An injury or illness that fits OSHA's definitions of injuries and illnesses and that must be recorded on OSHA forms. See Exhibits 12 and 13.

RULES AND REGULATIONS: Written procedures distributed to employees to provide direction in meeting safety and health regulations.

ERIC

SERIOUS VIOLATIONS: Existing dangers that probably could cause death or serious physical harm.

SUMMARY OF OCCUPATIONAL INJURIES AND ILLNESSES: Required OSHA form 200 that must be posted in a conspicuous place for employee observation.

SUPPLEMENTARY RECORD OF OCCUPATIONAL INJURIES AND ILLNESSES: The OSHA 101 form designed to supplement the accident information on the OSH log. Worker's compensation or other insurance forms may be used instead of OSHA 101 if the same information is recorded.

WILLFUL VIOLATIONS: Violations committed intentionally or violations that the employer has not made a reasonable effort to correct.

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