

DEPARTMENT OF LABOR AND EMPLOYMENT

Division of Workers' Compensation

**LOSS PREVENTION
&
LOSS CONTROL
PROGRAM MANUAL**



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Dear Colorado Employer:

Prevention of work-related injuries is the best way for employers to control the costs of workers' compensation. The Division of Workers' Compensation offers a Premium Cost Containment, Employer Certification Program to assist employers in reducing work-related injuries. Employers that become certified through this program qualify for a reduction in their workers' compensation premiums.

This manual provides basic guidelines to assist in the implementation of the essential elements of a loss prevention and loss control program. The Cost Containment Board requires that a loss prevention and loss control program be in place for at least one year for consideration in granting certification.

By attaining certified status in this program you will join the more than 4,500 Colorado employers with over 290,000 employees, widely recognized for outstanding achievement in preventing accidents and reducing costs.

It is my sincere desire that you will find this publication helpful. The Division's Cost Containment advisory staff is available for assistance and may be reached at 303.318.8644. Please accept my appreciation for your interest in the safety of employees and your efforts to reduce workers' compensation costs.

Sincerely,

A handwritten signature in black ink that reads 'Bob Summers'. The signature is written in a cursive style with a long, sweeping underline.

Bob Summers
Director

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Workers' Compensation

Loss Prevention & Loss Control Introduction

These procedures are presented with the overall goals of helping to prevent accidents and increasing safety awareness. Loss prevention must be an integral part of a company's operations and must be built into every process and procedure. This document is only a guideline and is not intended to address every safety area. Information on the Premium Cost Containment Program is outlined in a separate publication, "Essentials of the Workers' Compensation Premium Cost Containment Program and Employer Certification."

I. PURPOSE

Employers should use every safeguard and precaution available to protect employees from on-the-job injuries. Significant economic gains may result from an organized accident prevention program.

An accident is any unplanned or unforeseen event that interrupts the work schedule and may include property damage or injury.

Risk assessment must become part of every operation to maximize production efficiency and eliminate injuries.

Consider the following COSTS:

Direct:

- ◆ Cost of medical and indemnity payments for the injured worker (workers' compensation)
- ◆ Cost of property damage

Indirect:

- ◆ Cost of business interruption
- ◆ Public and employee relations

The costs associated with workers' compensation impact the employer in two ways:

1. **Rate Classification:** Rates are usually calculated on the loss experience (costs) associated with a specific class of employment. There are approximately 600 different classifications of employment in the rate-making system.

The Commissioner of Insurance determines rates based on recommendations from the National Council on Compensation Insurance (NCCI).

The Commissioner of Insurance determines rates with respect to adequate funding to pay claims and administrative expenses and to ensure economic survival of the insurer.

According to the 2000 Colorado rate schedule, rates for each \$100 of a payroll ranged from \$.26 for traveling auditors to \$58.78 for steel erectors. This is based on the past and expected future costs incurred within these classifications.

2. **Experience Modification:** Each individual employer's historical, actual incurred losses are compared with NCCI expected losses for the employer's given classifications and payroll. A factor of either a decimal (credit modification), unity, or a whole number plus a decimal (debit modification) is derived and applied (multiplied) to the basic premium.

For example:

a.	Basic premium =	\$8,000
	Modifier (debit)	x 1.15
	Cost of coverage	\$9,200
b.	Basic premium =	\$8,000
	Modifier	x1.0
	Cost of Coverage	\$8,000
c.	Basic premium =	\$8,000
	Modifier (credit)	x .90
	Cost of coverage	\$7,200

The above data shows that the employer in example "c", operating a successful loss prevention/control program, pays \$2000 less than the employer in example "a" for the same coverage.

While the workers' compensation premium cost has stabilized in Colorado, one thing is certain; if accidents are prevented, there are no costs to drive up the premiums.

II. PROPERTY DAMAGE

The costs associated with property damage are usually obvious and determined quickly. These losses may be readily insurable but frequently require a significant co-payment.

III. PRODUCTION INTERFERENCE

In the area of business interruption, the costs are difficult to measure and are usually overlooked. In an industrial accident, indirect costs may be many times the direct costs. The following indirect cost items are found in every accident:

- ◆ Production loss due to shutdown of machinery or processes under the control of an injured employee
- ◆ Time lost by fellow employees assisting the injured employee, discussing the accident and returning to normal production schedules
- ◆ Loss of future business or goodwill for failure to meet production schedules
- ◆ Time spent by the supervisor to prepare the accident report, investigate the accident, assist the injured employee and train a replacement

- ◆ Possible decreased efficiency of the injured employee for the period immediately following a return to work
- ◆ Decreased efficiency of the replacement
- ◆ Wages paid to the employee for the time lost on the date of the accident

IV. EMPLOYEE MORALE

A low accident rate can be an important factor in establishing a reputation as a good employer. Employees may view an effective accident prevention program with a low injury rate as management's interest in employee welfare.

V. PUBLIC RELATIONS

Poor safety records have an unfavorable effect on public opinion and may result in decreased consumer acceptance of products. This is particularly true when catastrophes such as explosions and major fires receive wide publicity. An outstanding safety record can be used to improve public relations. A poor safety record may give the employer a bad reputation. This makes it difficult to maintain good community relations and may hinder recruitment of a satisfactory labor force during periods of low unemployment.

Part 1 Loss Prevention

I. LOSS PREVENTION POLICY

The Loss Prevention Program must begin with a declaration of a Prevention and Loss Control Policy from top management.

A good policy makes it easier to enforce safe practices and conditions, to implement company goals, to follow safety rules and to maintain equipment.

Basic to a policy declaration are these statements:

- ◆ Safety and health of employees, the public and company is the highest priority.
- ◆ Prevention of accidents is more important than short cuts or haste.
- ◆ Every attempt will be made to reduce the possibility of accident occurrence.

The National Safety Council offers the following examples of policy statements:

- ◆ When workers enter the employ of this company, they have a right to expect a proper place to work and proper machines and tools to do their jobs. They can devote their energies to their work without fear of possible harm to their life and health.
- ◆ Only under such circumstances can the relationship between employer and employee be mutually profitable and harmonious. It is our desire (a) to provide a safe workplace, safe equipment, proper materials and (b) to establish and insist upon safe methods and practices at all times.
- ◆ It is a basic responsibility of all executives to make the safety of human beings a part of their daily, hourly concern. This responsibility must be accepted by all who have a part in the affairs of the corporation, no matter in what capacity they may function.
- ◆ Management considers no phase of operation or administration more important than accident prevention. It is the policy of the company to provide and maintain safe and healthful working conditions and to follow operating practices that will safeguard all employees and result in safe working conditions and efficient operation.

- ◆ We believe in the dignity and importance of the individual employees and in their rights to derive personal satisfaction from their employment. In this creed is our belief that the safety of employees continues to be the first consideration in the operation of the business.
- ◆ Safety is our responsibility in management. Without question it is our number one responsibility, taking precedence over everything else.
- ◆ Accident prevention and efficient production go hand-in-hand. All levels of management have a primary responsibility for the safety and well-being of all employees. This responsibility is met only by working continuously to promote safe work practices among all employees and to maintain property and equipment in safe operating conditions.
- ◆ The supervisor is the key in the safety program because he or she is in constant contact with employees. No supervisor or operating head may ever be relieved of any part of the responsibility for safety. Safety is an operating function and cannot be transferred to a staff organization.
- ◆ Safe practices by employees must be part of all operations. No job shall be considered efficiently completed unless workers have followed every precaution and safety rule to protect themselves and their fellow workers. The ideals of production and safety are inseparable.
- ◆ "Total safety" extends into three important areas: company personnel, products and customers, and the public. This policy is implemented in the following ways:
 - a. Development and application of safety standards both for production facilities (equipment, tools, work methods and safeguarding) and for products, based on applicable legal and voluntary codes, rules and standards as a minimum.
 - b. Safety inspection to identify potential hazards, both in production and in products. Packaging, labeling and instruction sheets are designed to minimize hazards or alert users to hazards inherent in the product.

- c. Accident investigation to determine cause of accidents and prevent recurrence.
- d. Accident records and accident-cause analysis to determine accident trends and provide targets for corrective action.
- e. Education and training in general safety principles and techniques. Include on-the-job safety instruction by the supervisor and periodic supervisory contacts for new instructions, follow up and general safety motivation.
- f. Protective equipment to provide personal protection in hazardous areas.
- g. Industrial hygiene studies to identify potential health hazards and develop necessary protective measures.
- h. Safety publicity and promotion to set up program interest and participation.
- i. Off-the-job accident prevention in cooperation with public and private agencies to promote the application of accident prevention principles to non-work activities.

II. PRE-EMPLOYMENT SURVEY (QUESTIONNAIRE)

The pre-employment survey should not discriminate against workers who sustained past injuries and are sufficiently recovered to return to work. It should ensure the safety and well-being of all workers by not requiring them to work at tasks exceeding their physical limitations. A physical examination could be done to ensure that the job assignment is not a hazard to an individual or co-workers. Remember: all efforts must conform to the standards of the Americans with Disabilities Act (ADA).

III. NEW EMPLOYEE ORIENTATION

New workers are most vulnerable to accidents. Studies show that 85-90% of all accidents involve unsafe practices by new employees in the overall workforce. For example, workers who have been on the job a month or less account for 25% of all construction accidents.

At a minimum, orientation should include the following elements:

- ◆ Company /plant/job site general safety rules
- ◆ Emergency response and evacuation procedures
- ◆ Fire prevention and reporting procedures
- ◆ Hazard identification and reporting
- ◆ Personal protective equipment pertaining to requirements of specific job responsibilities
- ◆ Electrical safety
- ◆ Housekeeping
- ◆ Hazard communication program ("Right to Know")
- ◆ Workers' Compensation Rights and Responsibilities: Reporting requirements, adherence to safety rules, designated medical provider, scope of benefits
- ◆ Reporting of all unsafe conditions
- ◆ Reporting of all injuries or "near misses"

New employee orientation should be documented. This may be a checklist with the signatures of the trainer and the employee. That new employee document should become part of the employee's permanent personnel file.

New employee orientation is only the first step in the overall training, continuing with constant reinforcement.

IV. SPECIALIZED LOSS PREVENTION TRAINING

Make all employees aware of the hazards inherent in their specific duties and all measures to do jobs safely. The first-line supervisor must thoroughly train workers performing an unfamiliar task in:

- ◆ Methods
- ◆ Procedures
- ◆ Personal protective equipment
- ◆ Precautionary or safety practices to be followed
- ◆ Prevailing safety rules associated with specific tasks

The first-line supervisor and employee should sign off with the date of completion of each training exercise. See Appendix A, Guidelines for Loss Prevention Training Meetings.

V. LOSS PREVENTION ENGINEERING

The objective in this phase is to design equipment and processes and to plan job procedures so that exposure to injury is eliminated or controlled.

Considerations:

- ◆ Is there a danger of striking against, being struck by, or otherwise being injured by an object?
- ◆ Can employees be caught in, on, or between objects?
- ◆ Can they slip or trip? Can they fall on the same level or to another?
- ◆ Can they strain themselves by pushing, pulling, or lifting?
- ◆ Is the environment hazardous (toxic gas, vapor, mist, fume, dust, heat, or radiation)?

Principal Solutions:

- ◆ Find a new way to do the job.
- ◆ Change the physical conditions that create the hazards.
- ◆ Eliminate hazards still present by changing the job procedure.
- ◆ Try to reduce the necessity of doing a job or the frequency that it must be performed. This is particularly helpful in maintenance.

The possible applications for these principles are innumerable and sometimes very complex. Often, such as in case of ventilation, this requires experts with highly specialized knowledge of these specific concerns and remedies. Your insurance carrier can assist in developing this program.

VI. PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) becomes necessary when a hazardous exposure is impractical or impossible to eliminate by engineering revision, safeguarding, or limiting exposure time. When it is determined that PPE is necessary, there are two important considerations:

1. The proper equipment is selected. For example, a mask designed to protect against particulates is worthless against vapor, gases or fumes.

If there is doubt, contact the supplier to assure that the application conforms to standards as set forth by:

- ◆ American National Standards Institute
- ◆ American Society for Testing and Materials
- ◆ The National Institute for Occupational Safety and Health
- ◆ Mining Safety and Health Administration
 1. The supervisor needs to make sure that the employee uses and maintains the equipment correctly. Using personal protective equipment requires awareness and training on the part of the user. Employees must be aware that the equipment does not eliminate the hazard.

If the equipment fails, exposure will occur. To reduce the possibility of failure, equipment must be properly fitted and maintained in a clean, serviceable condition. Fit is extremely important in assuring employees' acceptance.

PPE typically includes protection for:

- ◆ Head
- ◆ Eye and face
- ◆ Hearing
- ◆ Respiration
- ◆ Torso
- ◆ Arm and hand
- ◆ Foot and leg

The Bureau of Labor Statistics (BLS) reports:

- ◆ Most workers who suffered impact injuries to the head were not wearing protection. More than half were struck on the head while they were looking down and three-tenths were looking straight ahead. One-third were injured when bumping into non-moving objects.
- ◆ Sixty percent of workers who suffered eye injuries were not wearing eye protection because it was not the "practice" to do so. Flying or falling blunt metal objects were typically the cause.
- ◆ Most workers suffering from foot injuries were not wearing protective footwear. During normal duty, they were injured by objects weighing an average of 65 pounds that fell fewer than four feet.

Many good suppliers of PPE can recommend and furnish items that will exactly fit the need of your employees.

REMEMBER! PPE can only be effective if: it is approved for its specific use; it fits properly; the user is trained in its use; and 100% compliance is in force.

VII. LOSS PREVENTION RULES

To prevent losses effectively, rules must be clearly defined. In the training phase, employees must be made aware of the rules. When possible, rules should be posted in appropriate and conspicuous areas. A worker who willfully violates a workplace safety rule, and then is injured, may receive a penalty of 50% reduction in workers' compensation disability benefits. See Appendix B for General Loss Prevention/Safety Rules.

VIII. HAZARD COMMUNICATION PROGRAM ("RIGHT TO KNOW")

This federally mandated program requires that employees be totally informed about the hazards of chemical compounds they work with and how to protect themselves. All manufacturers and importers of chemicals must evaluate the hazards of their products and provide all such information to the users.

The following are the employer's responsibilities:

- ◆ The material safety data sheet (MSDS), furnished by the manufacturer, describes chemical, physical and hazardous properties of industrial chemicals. This must be available to all employees in the work area and updated as necessary.

Material Safety Data Sheet information is included in Appendix C.

- ◆ All containers must be labeled for health and physical hazards.
- ◆ All personnel in contact with any compound(s) included under this program must be specifically trained in proper handling, storage, transfer and application as well as appropriate personal protective equipment, leak and spill procedures and first aid.

- ◆ In all areas where there is exposure to chemical hazards, engineering and/or ventilation should be facilitated. Personal protective equipment is a measure of last resort.

The following is a list of engineering control methods:

Substitution

Substitution of a less toxic material is an effective control method. Make sure if you do substitute, you do not introduce a new hazard.

Process Change

Process operations or equipment can be modified to reduce the generation of contaminants.

Isolation

Toxic sources can be isolated by enclosing the system, such as spray booths, or total enclosure of the area.

Wet Method

Dusts or some mists can be controlled by using water. Operations such as chilling and some asbestos removal can be done better wet.

Local Exhaust

Air contaminants can be removed right at the source by use of flexible ducts, hoods and/or hoses.

Path

When source control measures are ineffective or not feasible, use a general environmental control such as "general housekeeping" or "dilution ventilation."

Good Housekeeping

Good housekeeping will eliminate many physical hazards.

General or Dilution Ventilation

This includes mass infusions of fresh air into the workplace thus reducing the contaminant level.

Rotation of Workers

This works to reduce exposure by limiting the time an employee is exposed to the hazard.

Isolation of Workers

Workers can be protected by being placed in cubicles with filtered air.

IX. INVESTIGATION

Accident investigation is extremely important in loss prevention and loss control.

It is important to determine why accidents happened and how to prevent recurrence. Consider the following "after-the-fact" information:

1. Identify and locate the principal sources of accidents by determining from experience the materials, machines and tools most frequently involved in accidents and the jobs most likely to produce injuries.
2. Ascertain the nature and size of the accident problem in departments and among occupations.
3. Indicate the need for engineering revision by identifying the principal unsafe conditions of various types of equipment and materials.
4. Locate inefficiencies in operating processes and procedures. For example, poor layout may contribute to accidents. Outdated methods or procedures can be avoided by using mechanical handling methods.
5. Determine unsafe practices that require employee training.
6. Identify improper placement of personnel where inabilities or physical handicaps contribute to accidents.

It is highly recommended that events and/or conditions leading to an unusual or serious injury be shared with other employers with the same exposure. This is a tool for lowering workers' compensation costs.

- ◆ Investigate and report on serious or unusual accidents.

Remember: Workers' compensation rates for any given classification are determined by costs incurred industry-wide.

X. INSPECTION SCHEDULE

A sound loss prevention program requires inspection of the workplace to identify, correct and eliminate unsafe conditions or practices. The size of the operation and type of work performed will dictate the frequency, complexity and level of management involved.

The National Safety Council recommends:

Periodic Inspections: Scheduled at regular intervals, systematically planned and sometimes required by law (e.g., fire extinguishers).

General Inspections: Cover entire premises and out-of-the way places. Look where injuries and near misses have occurred.

Intermittent Inspections: Done at irregular intervals, often as a result of high incidences in a particular area.

Continuous Inspections: Usually done by first-line supervisor. New hazards may arise anytime.

Committees formed to promote loss prevention and review accidents should be an integral part of the inspection process, for the actual inspections and the hazard abatement process. This document cannot list all items identified on a safety inspection checklist or all workplace applications. A sample general construction check list is presented in Appendix D.

XI. SAFETY / RISK ASSESSMENT COMMITTEE

This forum is created to foster loss prevention through communication.

Functions of the committee should include:

- ◆ Serve as liaison between workers and management in matters about safety.
- ◆ Discuss with management and recommend safety policies.
- ◆ Identify unsafe conditions and practices, determine remedies and report on progress and completion.

- ◆ Determine applicable safety rules, know where safety training is needed and review safety procedures.

The committee should be composed of management and non-management employees who represent a broad cross section and knowledge of the entire operation. The committee will be successful if:

- ◆ It maintains a positive effort to prevent work-related incidents while still allowing the employees to express their safety concerns openly. The meetings should not be "what's wrong with the company" gripe sessions.
- ◆ Management maintains an active and responsive interest and does not simply delegate its responsibility to the committee.

The selection of membership, frequency of meetings and extent of committee authority will depend upon the size and type of the operation. The following is a sample agenda:

1. Call the meeting to order
2. The secretary should call roll.
3. Read and approve the minutes of previous meeting.
4. Reconsider all unfinished business.
5. Discuss the accident review and preventive measures.
6. Discuss safety inspections and unsafe conditions and practices and include in minutes. Schedule abatement progress as agenda item for the next meeting.
7. Discuss new business.
8. Adjourn the meeting.

The committee membership should be rotated periodically and as many personnel as practicable should be appointed.

XII. FIRST-LINE SUPERVISOR IS "KEY" PERSON

As the direct supervisor over the employees, the first-line supervisor plays a crucial role in the success of your

safety program. The daily contact with the workers places the supervisor in a unique position to make the program work.

Supervisors must conduct the safety meetings and teach both the safety rules and safety thinking. They must be alert for dangers and make sure that precautions are taken.

The supervisor must insist that the company safety rules are learned, followed and enforced. If there is an accident, the supervisor has the personal responsibility to make sure the injured receive first aid and medical care, if necessary.

The following is a detailed listing of the supervisor's duties:

1. Ensure that the entire loss prevention/control program is carried out at the work level.
2. Review laws about safety with proper supervisors. Be familiar with all safety requirements.
3. Correct and eliminate unsafe practices when observed.
4. Make sure no unsafe conditions exist in the work areas and be responsible for hazards not corrected.
5. Keep all necessary protective equipment on hand and insist on its use without exception.
6. Educate and motivate the workers regarding safety roles, procedures and attitudes. Conduct safety meetings and instruct all the workers in safe procedures and job safety requirements. Follow up by educating employees on safety habits and insisting on compliance with company rules.
7. Discuss safety in personal contacts with each worker on every operation. Develop safety habits, instill caution and teach the proper procedure. The supervisor must SELL the safety program to the employees.
8. Report all accidents promptly and attend to all injuries.
9. Investigate all accidents and file a complete accident report with the superintendent. Take corrective action.

XIII. HEARING CONSERVATION

The following explains how sound is measured:

1. The decibel (DB) measures the "hardness" of sound. 0 DB = threshold of sound and 120 DB = threshold of pain. Measurement is logarithmic and cannot be added or subtracted arithmetically (e.g. 2 machines each creating 90 DB, collectively create 93 DB not 180 DB).
2. Hertz (Hz) measures the frequency of sound (cycles per second). The normal hearing person hears 20 to 15,000 Hz.

Permanent hearing loss may result from exposure to industrial noise.

The hearing conservation amendment requires that employers monitor noise exposure levels to accurately identify employees who are exposed to noise at or above 85 DB average over an eight-hour, time-weighted average (TWA). After this has been determined:

- a. Audiometric testing must be made available to all employees who have average exposure levels over an eight-hour period of 85 DB, or above.
- b. A base line hearing test must be made. The base line is made within 6 months of an employee's first exposure at or above an eight-hour TWA of 85 DB. Issue hearing protectors immediately when learning of the exposure.

- c. An annual audiogram must be conducted within one year of the base line. If an average shift in either ear is measured at 2,000, 3,000 and 4,000 Hz, the employee must be fitted or refitted with adequate hearing protectors. Such employees must be notified within 21 days of such a "shift," a Standard Threshold Shift (STS).

This program must be conducted under the auspices of a professional audiologist or physician. Mobile vans are available for job-site testing.

Noise exposure measurement records must be kept for two years. Records of audiometric test results must be maintained for the duration of employment of the affected employee. Audiometric test records must include:

- ◆ the name and job classification of the employee.
- ◆ the date.
- ◆ the examiner's name.
- ◆ the date of the acoustic or exhaustive calibration.
- ◆ measurements of the background sound pressure levels in audiometric test rooms.
- ◆ the employer's most recent noise exposure measurement

As discussed in the personal protective equipment (PPE) section, employee training is very important. The protective equipment must fit as comfortably as possible.

PART 2 LOSS CONTROL

Reducing The Severity Of An Accident

I. FIRST AID TRAINING

First aid is the immediate care given to a person who is injured or suddenly becomes ill. It includes self-help and on-the-job care if other medical assistance is not available. It includes well-selected words of encouragement, evidence of willingness to help and promotion of confidence by a demonstration of competence. Besides helping promote safety awareness, first aid knowledge and skill may also mean:

- ◆ the difference between life and death.
- ◆ the difference between temporary and permanent disability.
- ◆ the difference between rapid recovery and long hospitalization.

Through the study of first aid, a person is prepared to assist others in case of injury, to give instructions in first aid and to promote a reasonable safety attitude. Those trained in first aid are better able to care for themselves in case of injury or sudden illness. First aid training is very important when serious accidents occur and medical services may be limited or delayed.

First aid begins with action. Prepare your employees, by providing them with the knowledge and skill to help in situations when first aid care is needed. This can be accomplished by contacting the Red Cross office in your area to obtain training. The Red Cross provides excellent training in CPR, standard and advanced first aid and water safety.

II. DESIGNATED MEDICAL PROVIDERS

Under C.R.S. §8-43-404 (5)(a), the employer or insurer has the right in the first instance to select the physician who attends an injured employee. If no physician has been designated the employee may attend the physician or chiropractor of his or her choice.

If the employee wants to change physicians, the employee must request this in writing to the employer's insurance carrier. If the insurance carrier does not respond within 20 days, the employee may see the requested physician.

If the insurance carrier denies the request, the employee may request a hearing on this issue.

By designating medical providers, the employer will have an immediate source of treatment and care for the injured employee. This same facility can manage all workers' compensation claims. This fosters a better line of communication with the employer, insurer and attending physician.

In making the selection of the designated medical provider, it is important to furnish the best medical care possible for the injured worker to reach maximum medical recovery quickly. Your insurance carrier can assist in the selection of the best possible medical provider. Considerations in selection of the provider:

1. Knowledge of work-related injuries
2. Knowledge of workers' compensation and the medical fee schedule
3. Decisiveness in the determination of maximum medical improvement and a philosophy of returning employees to work on limited or modified duty
4. Willingness and ability to communicate
5. Accessibility to job location

A formal agreement should be written when the selection is made. All employees should be notified of the selection. A sample notification letter to employees is in Appendix F.

III. EMPLOYER MUST RESPOND IN QUICK AND POSITIVE WAYS

When a clearly compensable disabling or serious workplace injury occurs, the most important consideration is the injured employee. The employee is not only injured, but may be confused and anxious about the future. In addition to medical attention, the employer has at least two immediate responsibilities:

- ◆ Interview the injured worker and perhaps family members to explain statutory benefits.
- ◆ Contact the insurance carrier to explain the circumstances. Indicate that the case is a compensable injury. When completing the Employer's First Report, attach a doctor's statement.

Keep in communication with your carrier and employee.

IV. IMMEDIATE INVESTIGATION

Accident investigation is a critical factor in loss control. Questions often arise too long after the fact, such as:

- ◆ Was this accident the result of third-party negligence?
- ◆ Did the alleged trauma happen on the job (arise out of and in the course of employment)?

Immediate response in investigating the matter is the key. Interview all witnesses and take written statements. Photographs may be necessary.

No equipment or material evidence of the cause of the accident should be moved or removed until the investigation has been completed.

When serious, fatal, or possible third-party negligence accidents occur, call your insurance carrier immediately. They may refer a field representative to the scene for immediate investigation.

First-line supervisors must be thoroughly trained in the importance of immediate investigation and communication with management, the carrier, and the employee. Remember: it may be too late to question compensability or the possibility of third-party negligence several days after the incident. See Appendix E for a sample accident investigation form.

V. RETURN-TO-WORK POLICY FOR PARTIALLY RECOVERED WORKERS (MODIFIED DUTY)

A key concept in controlling claim cost is modified duty. This is work for employees who may return to some kind of work but are not medically ready to resume their regular duties.

The sooner an injured worker can return to meaningful employment, especially with the same employer, the less time off work and on total disability. The longer a person is off work, the more difficult it is to return. Employees on disability may feel distanced from the employer and may suffer from anxiety, depression and a diminished motivation to return to work.

Restricted, limited, or modified (never call it light) duty must correspond with physical restrictions set and approved by the attending physician. Return to productive employment has many rewards:

- ◆ Improve employee self-esteem
- ◆ Less emphasis on disability
- ◆ Free others to do additional tasks
- ◆ Shorter recovery period
- ◆ Lower claim cost

Recent studies reveal that companies actively involved in modified duty programs were able to reduce:

- ◆ workers' compensation costs.
- ◆ lost work days.
- ◆ lost-time case settlement.

Remember: disability payments ultimately come out of the employer's pocket and raise the rates of the entire industry.

As our workforce ages and shrinks, retention and retraining of employees is becoming more important. The employer who places a value on the health and well-being of employees will attract those of high caliber.

APPENDIX A:

Guidelines For Loss Prevention Training Meetings

The supervisor or safety coordinator is responsible for preparing and conducting weekly safety training meetings for employees.

These meetings are an essential element of the employer's safety and health training program. Projects that have good meetings experience better loss records than those that have poor or no safety meetings.

To assist in the preparation of material and presentation of a safety training meeting, the following guidelines are provided:

PREPARING FOR THE MEETING

Select the topic for the meeting several days in advance. This will give you a chance to become familiar with the subject to be discussed. You should present the talk in a convincing manner without reading it.

Schedule the meeting at the same time every week, if possible, and hold it right in the work area. These meetings are generally 5 to 15 minutes in length so seating is not important. Make sure everyone can easily see and hear you. A good time to hold the meeting is just after a shift begins or immediately following the lunch break. Try to hold meetings in the middle of the week.

Just before the meeting, gather all the material and/or equipment you need. When possible, use actual demonstrations to illustrate your points. For example, if you are talking about fire extinguishers, have one with you to show what it looks like and how to use it. Have a mushroomed tool head or a broken hammer handle to show how they can cause accidents. If necessary, get someone to help you.

The entire crew should be present before the meeting is started.

CONDUCTING THE MEETING

- ◆ Start on time. You may lose interest if unnecessary delays occur.

- ◆ Make the meeting short and to the point. However, if you get a good discussion going, use discretion about cutting it off too soon.
- ◆ Start the meeting by complimenting the employees on some recent good work.
- ◆ Give the talk in your own words.
- ◆ Get people to participate in the meeting. The purpose is to get workers to think about safety problems. Encourage them to offer suggestions for improving safety in the work area or their craft.
- ◆ Maintain control. Do not allow the meeting to develop into a wasteful, time consuming "bull session."

OTHER ITEMS TO COVER

Review any injury that happened during the past week. Discuss what the injury was, how it happened and how it could have been prevented.

- ◆ Review safety violations noted during the past week. Discuss the nature of the violation, the danger involved and offer constructive criticism without naming any one in particular.
- ◆ Review the work planned for the week ahead. Discuss hazards to avoid or control, safety equipment to be used and safe procedures to be followed.
- ◆ Emphasis is on the total safety of the employee, not only on the job but also at home.

RECORD KEEPING REQUIREMENTS

- ◆ Have each employee sign the attendance sheet at the conclusion of the meeting. The supervisor conducting the meeting must also sign it.
- ◆ Make certain it is dated and the specific type of employees attending and the meeting location are listed.
- ◆ Subjects discussed must be covered in detail. "General Safety" is not specific enough.

Specific training programs may include the following subjects:

DRIVING SAFETY

Safe Driving Rules On and Off the Job
Safe Driving on the Project
Drinking and Driving

ELECTRICAL SAFETY

Machine Contact with Energized Power Lines
Human Contact with Energized Power Sources
Misconceptions about Electricity
Electricity on the Job
How to Work with Electricity
Electrical Safety

EQUIPMENT SAFETY

Safety Tips for Mobile Crane Operations
Safety Tips for Rear-Steering Equipment
Heavy Equipment Safe Practices
Mounting Heavy Duty Tires and Rims
Mechanical Guards, Why Have Them?
Equipment Dangers
Safe Operation of Forklift Trucks
Maintenance and Repair of Safety Equipment
Securing Machinery Properly
Safe Operation and Inspection of Cranes
Safety Checks for Trucks
Safety Checks for Tracked Vehicles

FALL PREVENTION

Falls-Same Level
Falls in General
Causes and Prevention of Falls
Falls often Caused by Foolish Acts

FIRE PREVENTION & PROTECTION

Fire Extinguishers
In Case of Fire
Tips for Fire Prevention
Handling and Re-Using Metal Drums Safely

FIRST-AID & SANITATION

Mouth-to-Mouth Resuscitation
Learning First Aid
What to do When Someone is Injured
Serious Injuries and Emergency Care
Heat Exhaustion and Sunstrokes
Importance of First Aid
Safety and Sanitation

GAS CYLINDERS

Capabilities of a Gas Cylinder
Care and Use of a Gas Cylinder
Hazards in Handling Acetylene Cylinders
Handling Acetylene and Oxygen Cylinders
Safety Tips for Storing and Handling Gas Cylinders

HOUSEKEEPING

Housekeeping on the Job
Housekeeping and Safety
Good Housekeeping

MATERIAL HANDLING

Caring for and Using Fiber Rope Safely
Caring for and Using Wire Rope and Chains Safely
Look Where You're Going

PERSONAL PROTECTION

Dress Safely from Head to Foot
Wear Safe, Fire Resistant Clothing
Protect Your Eyes
Cartridge Type Respirators
Goggles vs. Eye Injuries
Why Wear Hard Hats?
Use and Care of Hard Hats
Use and Care of Safety Belts
Personal Protection Equipment
Foresight Preserves Eyesight
Prevent Blindness
Wear Hearing Protection
Safety Hard Hat
Work Gloves Protect Hands
Cold Weather Clothing
Proper Clothing
Protect Your Hands

SCAFFOLDS

Working Safely on Scaffolds
Scaffolds and Falling Object Hazards
Scaffolds

TOOL SAFETY

Compressed Air Tools
Hand Tools
Hand Tool Accidents
Safe Use of Hand Tools

BODY MECHANICS

Exercise
Proper Lifting
Right Tool and Right Way
Safe Use of Bench and Stand Grinders
Portable Electric Saw
Portable Power Hand Saw Safety
Machine Accidents
Levers
Electric Portable Tools
Operation of Grinders
Safety Tips for Hand and Power Tools

TRENCHING AND SHORING

Trenching Hazards
Excavation and Shoring

WELDING AND CUTTING SAFETY

Safe Practices for Arc Welding and Cutting Welding
Safety Tips for Welding and Cutting

APPENDIX B:

General Loss Prevention/Safety Rules

1. ELECTRICAL

- a. **Batteries** - When handling acid or batteries, wear face shields and protective clothing such as rubber gloves and aprons. Immediately flush with water any acid coming in contact with your skin. Avoid breathing acid vapors.
- b. **Danger Signs and Tags** - Be alert and strictly obey all warning and danger signs around electrical apparatus. Do not close a switch that has a danger tag on it signed by or placed there by someone else.
- c. **Electrical Hazards** - Do not use extension cords or any power tools or equipment when the cords are frayed, worn, or the wires are bare. Report such hazards to your supervisor or turn the equipment in for repair.
- d. **Grounding** - Do not use electric power tools or equipment that are not properly grounded.
- e. **Qualification** - Only qualified electricians are permitted to install, repair, or remove electrical wiring or equipment.
- f. **Respect Electricity** - Electricity must be respected at all times. Remember, even a little electric current can be a killer.
- g. **Temporary Lighting** - Report all unguarded or broken light bulbs. Do not hang lights by their cords unless the lights were designed to be suspended in that manner.

2. EQUIPMENT AND VEHICLES

- a. **Danger Zones** - Keep clear of all heavy equipment. Particular points of danger are blind spots to sides and rear of vehicles and in swing radius of cranes and shovels.
- b. **Elevated Loads** - Be alert to avoid swinging or suspended loads. Keep yourself and your fellow workers in the clear at all times.
- c. **Hoists and Elevators** - Ride only on authorized personnel hoists or elevators. Do not ride on a material hoist.
- d. **Jumping** - Jumping on or off equipment or vehicles, either moving or stationary, is prohibited. When climbing on or off machinery, face the unit and use secure hand and foot holds to prevent slips
- e. **Mechanical Guards** - No machine should be operated until all guards are in place. Guards are not to be removed except when necessary to make repairs and are to be replaced before equipment is again put into operation.
- f. **Operating Machinery** - Only authorized and properly trained and supervised personnel are permitted to operate equipment, vehicles, valves, electrical switches and other hazardous machinery.
- g. **Seat Belts** - If a vehicle or equipment is equipped with seat belts, the operator and the passengers must use them.
- h. **Transportation** - Ride only in vehicles designated for transporting personnel. Do not ride on running boards, fenders, or other projections and do not extend legs, feet, arms or other body parts over the edge of the truck bed.

3. EXPLOSIVES

- a. **Blasted Area** - Do not enter a blasted area until the fumes are dispersed and you have been authorized to do so.
- b. **Blasting Signals** - When working near blasting operations, know and obey the project's blasting signals. Know the difference between the warning and all-clear signals.
- c. **Explosives Containers** - Do not use empty explosives containers or packing material for any purpose. If you discover such material, report it to your supervisor so that it can be properly destroyed.
- d. **Qualifications** - Only qualified and authorized persons are permitted to handle, transport, or use explosives.
- e. **Smoking** - Smoking, open flames, or other fire sources are prohibited within or immediately adjacent to the blast area and when handling or working near explosives.
- f. **Unattended Explosives** - Report unattended explosives and open storage magazines to your supervisor immediately.

4. FIRE PREVENTION AND CONTROL

- a. **Cleaning Agents** - Flammable liquids will not be used as cleaning agents. Use only approved cleaning fluids.
- b. **Combustible Materials** - Gasoline and similar combustible liquids will be stored in secure "approved" containers and in an area free from burning hazards. Keep all heat sources away from combustible liquids, gases, or other flammable materials. When they are not in use, store combustible materials in a well ventilated, cool place.
- c. **Fire Extinguisher** - Do not remove or tamper with fire extinguishers installed on equipment or vehicles or in other locations unless authorized to do so or in case of fire.
- d. **Fire Fighting Equipment** - Fire fighting equipment must be kept free from obstacles, equipment, materials and debris that could delay emergency use of such equipment. Familiarize yourself with the location and use of the project's fire fighting equipment.
- e. **Oily Rags and Waste** - Discard and/or store all oily rags, waste and similar combustible materials in metal containers on a daily basis.
- f. **Safety Cans** - Handling of all flammable liquids by hand containers will be in approved safety containers with spring closing covers and flame arresters.
- g. **Smoking and Fires** - Extinguish all matches, cigarettes, cigars and pipe tobacco before discarding. Do not smoke while fueling equipment or close to refueling areas. Never leave open fires unattended.
- h. **Storage** - Storage of flammable substances on equipment or vehicles is prohibited unless such unit has adequate storage area designed for such use.
- i. **Types of Fires**
 - ◆ Class A (wood, paper, trash) - use water or foam extinguishers.
 - ◆ Class B (flammable liquids, gas, oil, paints, grease) - use foam, CO₂ or dry chemical extinguisher.
 - ◆ Class C (electrical) - use CO₂ or dry chemical extinguisher.

5. FIRST AID, HEALTH, SANITATION

- a. **Accident** - Avoid unnecessary moving of an injured person. Notify first-aid personnel immediately and keep the injured person as comfortable as possible until first aid arrives.
- b. **Burns** - Immediately treat acid, caustic and burns by flushing with cold water; then report promptly to first aid.
- c. **Drinking Cups** - Do not drink out of a common dispensing cup or ladle. Use only drinking fountains or individual disposable cups.
- d. **Drinking Water** - Drink water that is specifically supplied and marked for drinking purposes. Stream or river water may look clear but may contain deadly contaminants.
- e. **Electrical Shock** - Turn electric power off or use a dry board, stick, or other nonconducting object to remove the contact from the victim. Do not touch the victim until he or she is free from current contact.
- f. **Hygiene** - Personal cleanliness is extremely important. Many skin irritations result from careless or incomplete washing or bathing. Wash thoroughly and dry the skin completely to eliminate skin rashes, irritations and infections.
- g. **Redressing** - If it is necessary to have an injury redressed, report to first aid and to your supervisor immediately.
- h. **Reporting** - Report all injuries, no matter how slight, to first aid and to your supervisor immediately.
- i. **Treatment** - Follow all advice relating to your injury given by trained first-aid attendants, nurses, or physicians.

6. GENERAL RULES

- a. **Alertness** - Always be as familiar as possible and alert to conditions and work processes in surrounding areas. Also be alert to the presence of other workers and equipment so that you may foresee and avoid possible dangers.
- b. **Barricaded Areas** - "Roped off areas" or areas enclosed with barricades are considered danger zones and should be respected. Admittance to or passage through such areas is prohibited without permission, except for employees working within the barricaded area.

- c. **Barricades** - When work requires barricades or floor opening covers to be temporarily removed, keep area secured until the work is finished and then reinstall the barricade or floor covering immediately.
 - d. **Be Sure** - Know how to do the job safely. Know the hazards and how to protect yourself. Ask the advice of your supervisor if you are not sure.
 - e. **Firearms and Explosives** - Unless specifically authorized, firearms and explosives are prohibited within the project or plant area, on company property, and in or on equipment and other facilities.
 - f. **Man Skip** - Safety belts must be worn by all employees riding in a crane-hoisted man skip.
 - g. **Molten Metal** - In pouring or assisting in pouring molten metal or other hot fluids, safety glasses, face shields, and adequate body covering must be used. Burn-proof suits with hoods are a suitable substitute. Make sure the pour area is completely dry and free from moisture of any kind, otherwise, dangerous splattering and explosion can result.
 - h. **Moving Cables** - Do not touch or guide moving cables or running wires with any part of your body. Keep your hands and fingers away from blocks and shives. Stand clear of all cables, wires, and lines that are under strain.
 - i. **Safety Meetings** - It is a part of every employee's job to attend and take an active part in all safety training meetings and support the company's safety program. Read and abide by all safety materials made available to you; they concern your safety and health and the safety and health of your fellow workers.
 - j. **Speed** - Do not try to place speed above safety. An efficient, safe worker is better than a speedy, careless one.
 - k. **Throwing** - Throwing or dropping materials from one area or level to another is prohibited.
 - l. **Unsafe and Unhealthful Practices and Conditions** - Report all unsafe or unhealthful practices and conditions to your supervisor immediately.
 - m. **Warning Signs** - Always be alert for and heed all warning signs.
 - n. **Watch Out** - If each employee is watchful of everyone else, there will be fewer accidents and the job site will be a much safer place to work.
- 7. HOUSEKEEPING**
- a. **Clean-Up** - Keep your work area clean and safe at all times. Always keep yourself, equipment, and your work environment as clean as possible.
 - b. **Employee Facilities** - Cooperate in keeping change rooms, toilets, first-aid and drinking facilities in a clean, sanitary condition. They are provided for your convenience and health.
 - c. **Good Housekeeping** - Good housekeeping will reduce confusion on the project and will result in a safer, more efficient operation.
 - d. **Nails** - Protruding nails, screws or other metal in form lumber, boards, etc., must be immediately removed, bent over, or guarded to prevent puncture injuries.
 - e. **Oily Rags and Wastes** - Oily rags, waste, or other combustible debris should be kept in a metal container provided for that purpose.
 - f. **Removal of Debris/Garbage** - When cleaning up, do not throw or drop materials from upper levels to lower levels.
 - g. **Slipping Hazards** - Clean up or eliminate slipping hazards such as grease, oil, water, ice, snow or other liquids on walkways, ladders, stairways, scaffolds, access ways or working areas.
 - h. **Trash and Debris** - Deposit trash, refuse, debris, papers, and other waste in the proper refuse containers.
 - i. **Tripping Hazards** - Help keep the work area, especially roadways, access ways, aisles, stairways, scaffolds and ladders clear of obstructions that may cause tripping or other accident hazards.
- 8. LADDERS**
- a. **Ascending and Descending** - Face the ladder and use both hands and feet when going up and down ladders. Materials and tools should be lowered or raised by a rope or other mechanical means.

- b. **Good Condition** - Select the right ladder for the job. Do not use a ladder with missing or defective rungs, split side rails, or other weaknesses.
- c. **Painting** - Do not paint wood ladders because this may cover up defects.
- d. **Placing and Securing**
 - ◆ The ladder should be placed so that it extends at least three feet beyond the top landing. Make sure the base of the ladder is tied off or otherwise secured to prevent slipping or falling.
 - ◆ The base of the ladder should be set out at least one-fourth of the ladder height measured from the bottom to the point of bearing.
- e. **Work Safely** - When working from a ladder, do not overreach or work beyond the second rung from the top.

9. MATERIAL HANDLING AND STORAGE

- a. **Access** - When storing materials remember to leave adequate access ways. Do not block aisles or exits.
- b. **Flammable/Toxic** - Flammable and toxic or other harmful materials shall be stored in properly designated, well-ventilated areas. Observe and obey "No Smoking" and other warning signs.
- c. **Heavy Loads** - Do not attempt to lift heavy loads without assistance. Learn how to lift properly by bending your knees and lifting with your legs and arms, not your back.
- d. **Life Lines** - When working on material stored in silos, hoppers, tanks, or similar storage areas, wear a safety belt attached to a life line and have somebody standing by in case of an emergency.
- e. **Non-compatible Materials** - Avoid stacking non-compatible materials in the same pile.

10. PERSONAL PROTECTIVE EQUIPMENT

- a. **Company Policy** - All employees shall use the protective equipment prescribed by regulatory authorities, such as OSHA and contractors rules and regulations, to control or eliminate any hazard or exposure to illness or injury.

Employees who willfully refuse to use the prescribed protective equipment designed to protect them, or willfully damage such equipment, shall be subject to disciplinary action that may lead to their termination.

- b. **Ear Plugs and Muffs** - Appropriate hearing protection shall be worn in work areas where noise levels exceed established local, state, or federal standards.
- c. **Equipment Return** - Protective equipment such as safety goggles, safety belts, respirators, life vests, or rubber clothing furnished by the employer will be returned to the job-site office or warehouse when terminating employment with the company or moving to another job.

Individuals will be responsible for proper care of safety equipment and will take care not to lose or damage this equipment.
- d. **Goggles, Safety Glasses, Face Shields and Helmets**- Appropriate eye and head protection will be worn by every employee when:
 - ◆ Welding, burning, or cutting with torches.
 - ◆ Using abrasive wheels, portable grinders, or files.
 - ◆ Chipping concrete, stone, or metal.
 - ◆ Working with any materials subject to scaling, flaking, or chipping.
 - ◆ Soldering, handling, or working with molten metal or hot compounds.
 - ◆ Handling or working with hazardous liquids, powders, or substances (such as glass).
 - ◆ Drilling or working under dusty conditions.
 - ◆ Sand or water blasting.
 - ◆ Waterproofing.
 - ◆ Working on energized switchboards.
 - ◆ Using explosive actuated fastening or nailing tools.
 - ◆ Working with compressed air or other gases.
 - ◆ Working near any of the operations listed above.
- e. **Hard Hats** - All construction areas will be considered "hard hat areas" during active work periods. All employees and visitors must wear company approved hard hats during work hours while inside construction areas.

- f. **Life Vests** - Approved life vests will be worn whenever working over or near water in unsecured work areas.
- g. **Respirators** - Approved respirators will be used when excessive dusts, mists, fumes, gases, or other atmospheric impurities are determined to be harmful to health.
- h. **Safety Belts and Life Lines** - Safety belts and secured safety lanyards will be used by all employees working from unguarded surfaces where falls to a different level present a hazard. Each employee will also wear a safety belt with a safety lanyard secured to a separate life line while working from swing scaffolds, bos'n chairs, or other suspended work platforms where a falling hazard is present.
- i. **Footwear** - All employees working in construction areas should wear stout working boots. In areas such as tunnels, where there is danger of falling rocks, timbers, or other objects, hard toe safety boots or shoes should be worn.

11. SCAFFOLDS

- a. **Avoid Overloading** - Do not overload a scaffold. Make sure it will hold the load it is to bear.
- b. **Guardrails** - Do not work on scaffolds without adequate guardrails and toeboards.
- c. **Inspection** - Inspect the scaffold before you use it to be sure it is safe and without defects. Do not work on slippery or snow-covered scaffolding until it is cleared or sanded.

- d. **Makeshift Scaffolds** - Makeshift scaffolds are not permitted. Scaffolds shall be constructed safely using approved scaffold planking or other material. Make certain the scaffold is placed on a firm footing.
- e. **Rolling Scaffolds** - Dismount the scaffold when it is to be moved. Be sure to lock the wheels before remounting. Also, remove or secure tools and materials before moving the scaffold.

12. TOOLS

- a. **Damaged or Defective Tools** - Do not use broken, defective, burned, or mushroomed tools. Report defective tools to your supervisor and turn them in for replacement.
- b. **Hard Facing** - Do not strike two hardened steel surfaces together; i.e. two hammers or a hammer and hardened steel shafts, bearings, etc.
- c. **Power Tools** - Only assigned, qualified operators will operate power, explosive-actuated, or air-driven tools.
- d. **Proper Tool** - Always use the proper tool and equipment for any task you are assigned. For example, do not use a wrench as a hammer or a screwdriver as a chisel.
- e. **Storage** - Keep tools in their proper storage place when not in use. Do not leave tools where they might present a tripping hazard, fall on someone or some thing, or be stolen. Do not carry sharp-edged tools in your pockets.

APPENDIX C:

The Material Safety Data Sheet (MSDS)

The MSDS is a written document, usually prepared by the manufacturer of a product, that identifies the chemicals that make up the product. It is the central document for transmitting detailed hazard information. The terms used in the form are discussed below. If you have any questions about the hazardous properties described in the MSDS and how they relate to the conditions in your workplace, contact your supervisor or safety engineer.

SECTION I - IDENTIFICATION

This section identifies the product according to the label name, the manufacturer, the preparer of the form and the phone number where additional information can be obtained in case of an emergency. It also includes information on the general family or class of chemicals of which the product is composed (i.e., acids, bases, hydrocarbons, etc.).

SECTION II - HAZARDOUS INGREDIENTS

If the product is a mixture, or if any of its ingredients are evaluated as hazardous, the chemical and common names of these ingredients must be listed with their percentages and their Threshold Limit Values (TLV's) or Permissible Exposure Limits (PEL's). The TLV's and PEL's are the concentrations in air to which most workers can be repeatedly exposed day after day without adverse health effects. These levels were established from industrial experience and toxicological tests and incorporated into many of the OSHA standards. The levels of contaminants in the workplace can be measured and compared with these values to determine if a health hazard exists.

SECTION III - PHYSICAL DATA

The physical properties of a material are helpful in evaluating the hazards. These are discussed below:

Boiling Point - Refers to the temperature at which a liquid boils. Water boils at 212°F. Materials with low boiling points tend to evaporate quickly and may give off appreciable quantities of toxic or flammable gases. Materials with higher boiling points are less likely to do this unless heated. Low boiling point materials in closed containers will build up pressure when exposed to heat and can explode.

Vapor Pressure - Refers to the pressure exerted by the escaping gas or vapor from the surface of a liquid. The vapor pressure of a liquid varies with temperature. At the boiling point, the vapor pressure equals atmospheric pressure (760 mm, or 14.7 psi). Materials with low vapor pressures tend to evaporate slowly, while those with high vapor pressures evaporate rapidly and have greater potential to give off toxic or flammable gases.

Vapor Density - Refers to the weight of a vapor or gas relative to the weight of air. Materials with vapor densities greater than one (1) will tend to accumulate on the floor, while those less than one (1) will rise toward the ceiling.

Percent Volatile Material - Refers to the amount of material that will evaporate from the product, over time, at room temperature.

Evaporation Rate - Refers to the time it takes for a liquid to be converted into its vapor at a given temperature (relative together or butyl acetate). Materials with low rates evaporate quickly, while those with higher rates take more time.

Summary - From a hazardous and toxic properties standpoint, liquids with high vapor pressures, low evaporation rates and low boiling points are of greatest concern. Unless properly handled, they tend to vaporize rapidly and can produce high concentrations of potentially toxic or flammable gases.

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point - Refers to the temperature at which liquid will give off enough flammable vapor to produce a flame when a source of ignition (spark or flame) is present. Liquids with flash points below 80° F are especially hazardous, since they can give off vapors at room temperature that can be ignited by sparks or static electricity. Smoking, open flames, or high heat sources should never be permitted near flammable or combustible liquids.

Extinguishing Media - Describes the type of fire fighting media suitable for use on the burning material (i.e., water, CO², foam, etc.).

Special Fire Fighting Procedures - Describes any special precautions required for fire fighting such as personal protection equipment, how close to approach the fire, explosion hazards, etc. Under certain conditions, some materials can be unstable or can be incompatible when they come in contact with chemicals. At elevated temperatures, for example, some materials can decompose and give off toxic gases. When two incompatible materials come in contact, they may react and release large amounts of energy, possibly causing a fire or explosion. (This section describes the conditions and materials to avoid to prevent such occurrences.)

Effects of Over-Exposure - Describes the common health effects a person would experience due to chronic (long term) or acute (short term) over-exposures to the material.

Emergency and First-Aid Procedures - This describes the emergency and first-aid procedures to follow until professional medical help is available. It also describes the precautionary measures to be taken and the appropriate clean up and disposal procedures to be followed in the event of an accidental spill.

SECTION V - SPECIAL PROTECTION & CONTROL MEASURES

Any special precautionary information concerning handling, storage, or other matters not mentioned in previous sections would be covered here. This might include such things as medical conditions that could be aggravated by exposure to the product.

When engineering or administrative controls are not practical, personal protective equipment (PPE) will be required. When selecting PPE, make sure it meets with appropriate American National Standards Institute (ANSI) approval.

Workers can protect themselves in a variety of ways such as gloves, hard hats, respirators and safety glasses. PPE is only acceptable when engineering controls are not feasible.

When PPE is used, it must be evaluated to ensure proper protection. The following PPE represents some equipment now available for use.

Eye & Face Protection

Eye and face protection is required whenever danger exists from:

- ◆ Flying particles
- ◆ Liquid splashes
- ◆ Arcs, radiation or glare

Simple safety glasses are not acceptable for grinding and splashes. Careful selection of PPE must be done to ensure adequate protection.

Hand Protection

Gloves are used to provide protection against corrosive liquids, shock, heat, sharp surfaces, etc. Proper selection is essential.

Respiratory Protection

Respiratory protection must be used when:

- ◆ The air contaminant is highly toxic
- ◆ Other controls are not feasible

There are two basic types of respiratory protection devices:

Air Purifying

These respirators prevent air contaminants from entering the body by using different types of filters. "Mechanical filters" are used to eliminate particulate air contaminants such as dust, mists, sprays and fumes.

Chemical Cartridge

These respirators are equipped with special cartridges that "trap" gases and vapors before they are inhaled.

If the oxygen level falls below 16 percent, a person's life is in immediate danger. Mechanical ventilation or air-supplied equipment is required once the oxygen level falls below 19 percent.

APPENDIX D: General Construction Check List

	YES	NO	NOT APPLICABLE
During construction, alterations, or repairs, form and scrap lumber with protruding nails and all other debris, are cleared from work areas, passageways, and stairs.			
Combustible scrap and debris are removed.			
Containers are provided for collection and separation of waste, trash, oily and used rags, etc. Containers used for garbage and oily, flammable, or hazardous wastes are equipped with self-closing covers.			
Wall openings, from which there is a drop of more than four feet and the bottom of the opening is fewer than three feet above the working surface, are guarded.			
All materials stored in tiers are stacked, racked, blocked, interlocked, or otherwise secured to prevent sliding, falling or collapse.			
Aisles and passageways are marked and kept clear.			
Materials stored inside a building under construction have not been placed within six feet of any hoist way or inside floor openings.			
Every opening, floor, or platform four feet or more above the ground level has a standard rail and toeboards.			
All stairs with four or more risers have standard handrails.			
Materials are not stored on scaffolds or runways, in excess of supplies needed for immediate operations.			
Used lumber has all nails withdrawn before stacking.			
Lumber is stacked on level and solidly supported sills.			
Structural steel, poles, pipes, bar stock and other cylindrical materials are stacked and blocked to prevent spreading or tilting.			
Whenever materials are dropped more than 20 feet to any point outside the exterior walls of the building, an enclosed chute of wood, or equivalent materials, is used.			
When materials are dropped through holes in the floor without the use of chutes, the area into which the material is dropped is completely enclosed with barricades.			
Fixed stairways are designed and constructed to carry a load five times the normal live load anticipated, but never of less strength than to carry safely a load of 1000 pounds.			
Fixed stairways have a minimum width of 22 inches.			
Fixed stairs are installed at an angle between 30 and 50 degrees.			
All treads are reasonably slip-resistant.			

	YES	NO	NOT APPLICABLE
Standard stair railings are provided on the open sides of any exposed stairway and stair platforms. Handrails are provided on at least one side (right side descending) on closed stairways.			
Seven feet vertical is maintained above any stair tread.			
On all structures of two or more floors (20 feet or over) in height, stairways, ladders, or ramps are provided for employees.			
All parts of the stairways are free of hazardous projections.			
Debris and other loose materials are not to be allowed on stairways. Slippery conditions on stairways are eliminated as soon as possible. Portable stepladders are in good condition.			
Portable rung ladders have safety feet securely bolted or fastened. Metal ladders are equipped with non-slip material on rungs.			
Metal ladders are not used in areas where exposed to electric circuits. Except where permanent or temporary stairways or suitable ramps or runways are provided, ladders are used to give safe access.			
Ladders with broken or missing rungs or steps, broken or split side rails, or other faulty or defective construction are not used.			
It is ascertained by inquiry, direct observation, or by instruments that no part of an electrical power circuit, exposed or concealed, is so located that the performance of the work may bring any person, tool or machine into physical electrical contact.			
Proper warning signs are posted where such a circuit exists.			
Employees are advised of the location of such lines, the hazards involved and the protective measures to be taken.			
Employees do not work in proximity to any part of an electrical power circuit that they may contact in the course of their work unless they are protected against electrical shock by de-energizing the circuit and grounding it or by guarding it by effective insulation or other means.			
Extension cords used with portable electrical tools and appliances are of three-wire type.			
Combustible waste materials and residue in a building or operating area are kept in a covered metal receptacle and disposed of daily.			
Flammable or combustible liquids are not stored in areas used for exits, stairways, or areas normally used for the safe passage of people.			
Containers stored outside of buildings (not more than 60 gallons each), do not exceed 1,100 gallons in any one pile or area. Piles or groups of containers are separated by a five foot clearance. Piles or groups of containers are not nearer than 20 feet to a building.			
Permissible noise exposure levels have been checked. In areas where necessary, personal protective equipment is provided as needed.			
Storage areas are kept free of weeds and debris.			

	YES	NO	NOT APPLICABLE
An adequate supply of potable water is provided.			
Portable containers used to dispense drinking water are capable of being tightly closed and equipped with taps.			
Toilet facilities are adequate for the number of employees.			
A positive "Lock Out System" is provided to render machines operated by electrical motors inoperative while repairs or adjustments are made.			
"No Smoking" signs are posted in areas where conditions require them.			
Personal protective equipment for eyes, face, head and extremities, protective clothing, respiratory devices and protective shields and barriers are provided, used and maintained by employer wherever necessary.			
Fire extinguishers for necessary classes of fire are visibly mounted.			
Extinguisher tops are not more than five feet from floor. Those over 40 pounds are not over three and one-half feet from floor.			
Fire extinguishers have been inspected and are operable.			
Fire extinguishers for Class A fires are within 75 feet from any point in the work area, and extinguishers for Class B fires are within 50 feet.			
Access to extinguishers is not hindered in any way.			
Cylinders, tanks and air compressors have been checked for cuts or gouges, corrosion or pitting, or hairline cracks in necks.			
Storage Safety: areas are dry and clean; drain pipes or valves are at low point.			
All materials are piled, racked, or stored in a safe manner.			
High lift trucks have overhead guards and a working horn.			
Where lift trucks are used all aisles are clear of obstruction.			
Machines, presses, grinders, saws, etc., are properly guarded to protect employees from hazards created by:			
A. Point of operation			
B. Nip points			
C. Rotating parts			
D. Flying chips and sparks			
Any mechanically powered transmission apparatus seven feet or less above floor or work platform is guarded. These include:			
A. V belts, shafts, pulleys			
B. Chain and sprocket drives			
C. Fly wheels			

	YES	NO	NOT APPLICABLE
Compressed air cleaning equipment has been limited to less than 30 PSI and is chip guarded.			
Portable, power wood-working tools or equipment have dead man guards or switches to prevent accidental operation when not in use.			
All other hand-held power tools, such as circular saws, are equipped with a constant pressure guard.			
Safety nets are provided when workplaces are more than 25 feet above the ground or water surface, or other surfaces where the use of ladders, scaffolds, catch platforms, temporary floors, safety lines, or safety belts is impracticable.			
Nets extend eight feet beyond the edge of the work surface where employees are exposed and are installed as close under the work surface as practical but in no case more than 25 feet below such work surface.			
Personal protective equipment is worn in all operations where there is an exposure to hazardous conditions.			
Welding equipment is inspected for hazards.			
Oxygen and acetylene tanks are stored separately.			
Acetylene is not utilized at a pressure in excess of 15 PSI. Compressed gas cylinders are clearly marked as to content. Protection caps are in place except when in use.			
Suitable fire extinguishing equipment is immediately available in the work area and is maintained in a state of readiness for instant use.			
Whenever practicable, all arc welding and cutting operations are shielded by noncombustible or flame-proof screens.			
Medical personnel are readily available for advice and consultation on matters of employee health.			
A trained person (or persons) is available to render first aid.			
First-Aid supplies approved by the consulting physician are readily available.			
Where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body are provided within the work area.			
Transportation or a communications system for contacting necessary ambulance services is provided.			
The footing or anchorage for scaffolds is sound, rigid and capable of carrying the maximum intended load without settling or displacement.			
No scaffold is erected, moved, dismantled, or altered except under the supervision of competent persons.			
Guardrails and toeboards are installed on all open sides and ends of platforms more than six feet above the ground or floor, except needle beam scaffolds and floats. Scaffolds four feet to six feet in height, having a minimum horizontal dimension in either direction of less than 45 inches, have standard guardrails installed on all open sides and ends.			

	YES	NO	NOT APPLICABLE
Guardrails are two by four inches or the equivalent, approximately 42 inches high, with a midrail, when required. Supports are at intervals not to exceed eight feet. Toeboards are a minimum of four inches in height.			
Where persons are required to work or pass under the scaffold, scaffolds are provided with a screen between the toeboard and the guardrail, extending along the entire opening.			
Scaffolds and their components are capable of supporting without failure at least four times maximum intended load.			
All equipment left unattended at night, adjacent to a highway in normal use, or adjacent to construction areas where work is in progress, have appropriate lights, reflectors and barricades.			
Trucks with dump bodies are equipped with positive means of support, permanently attached and capable of being locked in position to prevent accidental lowering of the body.			
Employees engaged in site clearing are protected from hazards of irritant and toxic plants, and first-aid treatment is available.			
Walkways, runways, sidewalks are clear of excavated material or other obstructions, and no sidewalks are undermined unless shored to carry a minimum live load of 125 pounds per square foot.			
Employees exposed to vehicular traffic are provided with warning vests marked with or made of reflectorized or high-visibility material.			
Daily inspections of excavations are made by a competent person. If evidence of possible cave-ins or slides is apparent, all work in the excavation is stopped until the necessary precautions are taken to safeguard the employees.			
Prior to opening an excavation, efforts are made to determine whether underground installations will be encountered. When it is uncovered, proper supports are provided for the existing installations. Utility companies are contacted and advised of proposed work.			
Excavations are inspected by a competent person after every rainstorm or other hazard-increasing occurrence.			
Banks more than five feet high are shored, laid back to a stable slope, or some other equivalent means of protection provided.			
Sides of trenches in unstable or soft material, four feet or more in depth, are shored, sheeted, braced, sloped, or otherwise supported.			
Additional precautions by way of shoring and bracing are taken to prevent slides and cave-ins when excavations or trenches are made in locations adjacent to backfilled excavations or where excavations are subjected to vibrations.			
Employees working more than six feet above any adjacent working surfaces, placing and tying reinforcing steel in walls, piers, columns, etc., are provided with and directed to wear safety belts.			
Employees are not permitted to work above vertically protruding reinforcing steel unless it has been protected to eliminate the hazard of impalement.			
Employee safety meetings are scheduled and held at regular intervals.			
Adequate lighting is provided in work areas for work or jobs being performed.			

APPENDIX E: Supervisor's Accident Investigation Report

Location _____

The unsafe acts of persons and the unsafe conditions that cause accidents can be corrected only when they are known specifically. It is your responsibility to find them and name them and correct them.

PART I – GENERAL INFORMATION

Name of Injured _____ Age _____ Department _____

Date of Accident _____ Hour _____ A.M. P.M. Exact Location _____

Job or Activity at Time of Accident _____

Date and Time Supervisor was Notified of Accident _____

PART II – DESCRIPTION OF ACCIDENT (What happened)

Were there any witnesses? Please Name _____

PART III – WHAT WAS THE CAUSE OF THE ACCIDENT? (Determine the cause by analyzing all the factors concerned. If the injured person, a machine or other physical condition was involved, find out how and why.)

A. Describe any UNSAFE acts _____

B. Describe any UNSAFE conditions _____

C. FUNDAMENTAL CAUSE _____

PART IV – CORRECTIVE ACTION TAKEN (What have you done or what do you recommend to prevent a recurrence of a similar accident?)

Has it been done? _____ If not, give reason _____

Supervisor	Reviewed and Approved By	Date Report Prepared
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APPENDIX F: Sample Notification Letter To Employee

TO: Employee

FROM: Employer

DATE:

SUBJECT: Designated Medical Provider for Work-Related Injuries and Illnesses

Effective immediately, all employees must obtain treatment of work-related

injuries and illnesses from: _____

located at: _____

The phone number is:

In case of a life-or-limb-threatening emergency, the injured employee will be sent to the nearest emergency medical facility. Follow-up care must be provided by the medical provider designated above.

If an employee is treated by an unauthorized medical provider, the employee may be responsible for payment for said treatment.

All employees must sign below, acknowledging this company policy.

I have read and am fully aware of this company policy regarding medical treatment for work-related injuries and illnesses.

Signature of Employee

Date _____

APPENDIX G: Modified Duty Letter

Date: _____

Certified Mail

Return Receipt Requested

Certified Mail # _____

Name of Employee: _____

Employee Address: _____

Claim Number: _____

Date of Injury: _____

Dear (Employee):

Your treating physician, Dr. _____, has released you to modified work. We have identified a temporary position for you, which your physician feels you will be able to perform. Please refer to the attached job description.

The job is: _____.

You will receive \$ _____ per (hour/week/month). Your insurance benefits will be pro-rated accordingly and your claims adjuster should be contacted if you have any questions in this regard.

Please note that failure to accept this modified duty position may result in termination of temporary benefits.

We ask that you report to work on:

Date: _____ Hours per day/week: _____

Time: _____ Duration of job: _____

Report to: _____ Phone #: _____

Location: _____

If for some reason you should receive this letter after the report-to-work date, please contact (name of contact) immediately. (Name of contact) will be the contact person for you and your physician in your return to work process.

We are looking forward to seeing you and wish you a continued speedy recovery.

Sincerely,

Name, Title
Dept., Phone number

cc: Adjuster

APPENDIX H: Emergency Telephone Numbers

Emergency: 9-1-1

Police: _____

Fire: _____

Ambulance: _____

State Patrol: _____

Poison Control: _____

Hospital: _____

FBI: _____

CBI: _____

OSHA: _____

MSHA: _____

FEMA: _____

HAZMAT: _____

Red Cross: _____

Supervisor: Home _____ Cellular/Pager _____

Safety Director: Home _____ Cellular/Pager _____

Workers Compensation Insurance Carrier: _____

Designated Medical Provider: _____

