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# CAL/OSHA COMPLIANCE ADVISOR

*The Practical Guide to Workplace Safety for California Employers*

## SPECIAL REPORT

### Key Differences Between California OSHA and Federal OSHA

#### I. INTRODUCTION

Whether you're a California employer looking to expand into another part of the country or an employer from outside California planning to expand your business into the state, California's occupational safety and health program and rules are likely to be an issue for you.

This report covers some key differences between Cal/OSHA and Federal OSHA. For the most part, these will be requirements California has that Federal OSHA does not have. Federal law requires states with their own OSH programs to adopt standards at least as stringent as Federal OSHA standards within six months after a new Federal OSHA standard is finalized, so Federal OSHA standards are never more stringent than state rules. However, Federal OSHA sometimes utilizes specific compliance requirements where California OSHA uses general requirements instead. For example, many Federal OSHA standards have specific training and retraining requirements, but California leaves training and retraining schedules largely to employers as part of their Injury and Illness Prevention Programs.

This guide does not cover every difference between Cal/OSHA and Federal OSHA, but it highlights differences in the key areas of:

- standard structure
- Injury and Illness Prevention Programs
- recordkeeping
- hazardous chemicals
- ergonomics

#### II. STRUCTURE OF THE STANDARDS

Federal OSHA's requirements for General Industry are contained within the Code of Federal Regulations at 29 CFR 1910; Federal OSHA's requirements for the Construction Industry are contained within 29 CFR

1926. Recordkeeping requirements are found in 29 CFR 1904. Certain other industries (for example, mining and shipbuilding) are covered under other parts of the federal standards, but employers under federal jurisdiction who comply with either the General Industry standards or the Construction standards as well as the Recordkeeping standards can feel reasonably assured that their OSHA compliance bases are covered.

Not so for California. Employers in compliance with Cal/OSHA's General Industry Safety Orders or Construction Industry Safety Orders may also have to comply with additional California safety orders, including the Electrical Safety Orders, Tunnel Safety Orders, Unfired Pressure Vessel Safety Orders, Boiler Fired Pressure Vessel Safety Orders, and Compressed Air Safety Orders. Other safety licensing regulations exist outside the safety orders as well, such as the asbestos registration and certification rules. All workplace safety orders are found in Title 8 of the Code of California Regulations (8 CCR).

California is currently reorganizing its Title 8 regulations, using Washington State's regulations as a template. (Washington recently reorganized its occupational safety and health standards in a way that was well received by employers there.) The reorganization does not affect the standards that employers have to comply with in any substantive way; however, it should make compliance easier by making the standards themselves easier to find.

On Feb. 16, 2006, Cal/OSHA completed the first step in this process by incorporating the Compressed Air Safety Orders into the General Industry Safety Orders with the Diving Operations group. The next step will be to consolidate all agricultural rules into a separate Agricultural Safety Order. Cal/OSHA also plans to relocate the Pressure Vessel Safety Orders, identify "Core" safety orders and place them in a

separate subchapter, eliminate duplicative or overlapping regulations, create a comprehensive index to the standards, and make other changes to the organization and formatting of the regulations to make them more user-friendly. The current timetable for these changes extends through the middle of 2007.

### The General Duty Clause

The Federal Occupational Safety and Health Act (OSH Act) includes, in Section 5(a)(1), what is now commonly referred to as the "General Duty Clause":

Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees; and shall comply with occupational safety and health standards promulgated under this Act.

Federal OSHA uses the General Duty Clause in its enforcement activities. Whenever a Federal OSHA Compliance Officer (CO) finds, during an inspection, a hazard that could cause serious injury or death that is not covered by an existing OSHA standard, the CO can cite the employer for violating the General Duty Clause. This clause has been used to cite employers for exposing employees to pesticides; to cite construction industry employers for blood-borne pathogens hazards (the bloodborne pathogens standard is a General Industry standard, which doesn't apply to construction); and to cite employers for ergonomic hazards. Citations under the General Duty Clause resulted in some of the highest proposed penalties of any standard in OSHA's 2005 fiscal year.

Federal OSHA must be able to show that the following five things are true for a General Duty Clause citation to be valid:

- The cited workplace condition or activity must have presented a hazard to an employee (not just had the potential to present a hazard).
- The hazard must be a recognized hazard.
- The hazard must be likely to cause death or serious physical harm.

- Feasible means must exist to eliminate or materially reduce the hazard.
- The employer knew, or by exercising reasonable diligence could have known, of the hazardous condition.

California does not have anything like the General Duty Clause. The state's stringent administrative procedures rules, which apply to all lawmaking within California, preclude the state from having a catchall regulation of that type. Instead, an inspector who identifies a serious hazard not covered under one of Cal/OSHA's safety orders may:

- Cite the employer for violating the Injury and Illness Prevention Program standard, which requires employers to identify workplace hazards, abate those hazards, inform workers about hazards, and train workers in safe work practices.
- Initiate new rulemaking. All new standards in California are written by the California Occupational Safety and Health Standards Board. Requests for new standards may come from board staff, public petitions, or DOSH inspectors, among other sources.
- Initiate the creation of an Order to Take Special Action (sometimes called a Special Order). Orders to take Special Action are written and enforced on a site-specific or employer-specific basis. They may lead to new rulemaking, as described above.

### III. INJURY AND ILLNESS PREVENTION PROGRAMS

Since 1991, California employers have been required to maintain a written, effective Injury and Illness Prevention Program (IIPP). This is a comprehensive safety and health management program that involves every aspect of a worksite's Cal/OSHA compliance. Requirements for General Industry IIPPs are found in General Industry Safety Order 3203; requirements for Construction Industry IIPPs are found in Construction Industry Safety Order 1509 (which incorporates the General Industry IIPP

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## Cal/OSHA Injury and Illness Prevention Programs: A Compliance Checklist

Written Injury and Illness Prevention Programs for General Industry must address management commitment, safety communications, employee compliance, scheduled inspections, accident investigation, abatement procedures, safety and health training, and recordkeeping. Construction industry employers must also identify the person with the authority and responsibility for implementing the program.

**Management Commitment.** Cal/OSHA suggests that management's commitment to the IIPP be established using organizational policies, incentives, and disciplinary actions. To accomplish this, an IIPP should:

- establish measurable objectives
- define management's safety and health responsibilities
- provide for recognition of management's role in safety and health
- create a method to encourage reporting of unsafe conditions
- allocate resources
- require management to lead by example (for instance, by wearing required personal protection equipment when in production areas)

**Safety Communications.** An IIPP must include a two-way system for communicating with employees in an understandable form on safety and health issues. Communication strategies could include:

- labor/management safety and health committees
- meetings
- training programs
- posters and bulletins
- newsletters or other publications
- safety suggestion boxes or other means for employees to anonymously inform management of safety hazards and without fear of reprisal
- company safety policy or statement

**Employee Compliance.** An IIPP must include a system for ensuring that employees comply with safe and healthful work practices. This may be accomplished through:

- recognition of employees who follow such work practices
- training and retraining programs
- disciplinary procedures

**Scheduled Inspections.** These include an initial hazard assessment survey and follow-up inspections. A qualified person must complete the initial hazard assessment survey. Your IIPP should detail how you use the following in hazard assessment and control:

- periodic inspections
  - initial
  - whenever new processes, substances, procedures, or equipment are introduced into the workplace that present a new hazard
  - whenever management becomes aware of a new or previously unrecognized hazard
- procedures for correction and control
- identification of applicable Cal/OSHA safety orders
- abatement priorities, including scheduling procedures for abatement activities

**Accident Investigation.** You must have a written system for thoroughly investigating accidents that allows you to identify the cause(s) of the accident or near miss. Investigations should be conducted by trained individuals and should answer these questions:

- What happened?
- Why did it happen?
- What should be done?
- What action was taken?

**Abatement Procedures.** Methods or procedures for correcting unsafe or unhealthy conditions, work practices, and work procedures in a timely manner must be detailed in your IIPP. You must address:

- timely abatement, determined based on the seriousness of the hazard
- procedures for correcting a hazard when it is observed or discovered

*continued on next page*

- procedures for correcting a hazard that cannot be immediately corrected without endangering employees and/or property

**Safety and Health Training.** Training and instruction must be provided to employees whenever:

- the IIPP is initially established
- employees are given new job assignments for which they haven't been trained
- new substances, processes, procedures, or equipment are introduced into the workplace that present a new hazard
- management becomes aware of a new or previously unrecognized hazard

Training for supervisors should ensure that they know:

- the safety and health hazards that employees under their immediate supervision may be exposed to
- that they are key to your IIPP's success
- the importance of establishing and maintaining safe work conditions
- how to convey information to employees by example and instruction
- how to investigate accidents and take corrective and preventive actions

Training for employees should ensure that they know:

- that the IIPP's success depends on their actions as well as yours
- safe work procedures and how these protect them
- when PPE is needed, how to use it, and what to do to maintain it
- what to do in an emergency

**Recordkeeping.** You must keep records documenting that you've performed the various activities outlined in your IIPP, including inspections, accident investigations, and training. You must keep a record of each training you provide under your IIPP that includes:

- the name or other identifier (for example, an employee identification number) of each employee who received training
- the date the training took place
- the type of training
- the training provider(s)

You must keep a record of each inspection you conduct under your IIPP that includes:

- the name(s) of the person(s) conducting the inspection
- the unsafe conditions and work practices that were identified
- actions taken to correct the unsafe conditions and work practices

**Additional Requirements for Construction Industry Employers.** Written Injury and Illness Prevention

Programs for construction industry employers must also confirm that the employer will fulfill the following requirements:

- adopt a written Code of Safe Practices specific to the employer's operations
- post the Code of Safe Practices at a visible location at each jobsite office or provide a copy of the code to each supervisor
- hold periodic meetings of supervisors under management's direction to address any accidents that have occurred or any safety problems
- conduct "toolbox" or "tailgate" safety meetings with crews at least every 10 working days to emphasize safety

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requirements by reference and includes some additional requirements).

There is no statutory federal analog to California's IIPP requirement; however, Federal OSHA has published guidelines for creating Safety and Health Management Programs (SHMP), which are extensively used in its Voluntary Protection Program and consultation programs. OSHA's SHMP guidelines cover four basic areas, which overlap with some of California's IIPP requirements:

- management leadership and employee involvement
- worksite analysis
- hazard prevention and control
- training

Employers who have a SHMP program in place that follows Federal OSHA's guidelines may be able to expand and adapt it readily to comply in California; California employers with established IIPPs may find themselves a step ahead of the game in other states if they choose to participate in Federal OSHA's Voluntary Protection Program.

A checklist (see pages 3-4) is included to help employers create or assess their IIPPs for compliance with California's requirements. Also, note that some employers don't have to keep all documentation listed in the IIPP standard (see sidebar, right).

#### IV. RECORDKEEPING

Cal/OSHA and Federal OSHA both require employers to keep records of workplace injuries and illnesses, but there are some differences in the two sets of standards:

- **Reporting requirements.** Cal/OSHA's reporting requirements are separate from its recordkeeping requirements; they are found in 8 CCR 342. Federal OSHA's reporting requirements are included in 29 CFR 1904, Recordkeeping and Reporting. Federal OSHA requires employers to report fatalities within 30 days; California's standard is more stringent both in terms of what must be reported and the time limits for doing so. In California, all serious work-related injuries or illnesses and all fatalities must be reported immediately after the employer finds out about them. In practice, employers have up to eight hours to report such incidents to their nearest DOSH enforcement office.
- **Recordkeeping in the motion picture industry.** In California, employers in Standard Industrial Classification (SIC) Code 781 (Motion Picture Production and Allied Services) must record occupational injuries and illnesses. Federal OSHA exempts employers in this SIC Code from its recordkeeping requirements.
- **Needlesticks.** California requires employers in all industry categories to maintain sharps injury logs.
- **Records availability.** If records for multiple worksites are stored in a central location, California employers must ensure that each worksite has the address and telephone number of the central storage location immediately available, and that someone is always available during normal business hours at the central storage location to make those records available to employees, their representatives, and government representatives in a timely manner, as required by law. Government representatives must be given access to the original recordkeeping documents on request.
- **Annual summary availability.** Employees who do not report, at least weekly, to the work location where the Annual Summary of Work-Related Injuries and Illnesses is posted must be given a copy of the summary, either in person or by mail. The annual summary must be made available by the end of the next business day along with the Cal/OSHA Form 300 when requested by employees, former employees, employee representatives,

#### Exceptions and Exemptions to the IIPP Requirements

The standard exempts or allows alternate forms of compliance for:

- **Small employers.** Employers with fewer than 10 employees may instruct employees in safe work practices orally; written training materials are not required. They can comply with the training documentation requirements by keeping a log for each employee. The log should list instructions given to the employee when hired and when assigned to new duties that pertain to the job's unique hazards.
- **Small employers in low-hazard industries or small employers with low experience modification rates.** Employers with fewer than 20 employees who are in designated low-hazard industries, or employers with fewer than 20 employees who have an experience modification rate of 1.1 or less and who are not on DOSH's designated list of high-hazard industries, may limit their written IIPP documentation to:
  - the identity of the person(s) with authority and responsibility for implementing the program
  - inspection records
  - training records
- **Local government entities.** Local government entities are not required to keep records concerning the steps taken to implement and maintain the IIPP.
- **Construction employers.** Construction employers licensed under Chapter 9 of the Business and Professions Code do not have to keep training records as described in the IIPP standard if they have employee training records provided by a training program that the state Division of Occupational Safety and Health (DOSH) approves.
- **Employers with seasonal or intermittent workers.** These employers are considered to be in compliance with IIPP requirements if they adopt one of DOSH's model programs: either the Prevention Model Program for Employers of Intermittent Workers or the Prevention Model Program for Employers with Intermittent Workers in Agriculture. Information about both model programs is available through DOSH's website, [www.dir.ca.gov/](http://www.dir.ca.gov/).

or government agencies. Employers in SIC Code 781 (Motion Picture Production and Allied Services) have one calendar week to provide copies of the forms.

- **Operations that have shut down.** Multi-establishment employers in California don't have to post annual summaries for establishments that have ceased operations during the calendar year.
- **Personally identifying information.** Cal/OSHA specifies which personally identifying information must be deleted when copies of the Cal/OSHA Form 301, Incident Reports, are provided to authorized individuals. Federal OSHA is less specific about which information must be deleted.
- **Collective bargaining.** In California, employees and their representatives have the right to bargain collectively for access to information relating to occupational injuries and illnesses in addition to Cal/OSHA Form 300, Form 301, and Annual Summary.
- **Variances.** Private employers in California seeking a variance from Cal/OSHA's recordkeeping requirements must, surprisingly, petition Federal OSHA. Public employers in California seeking a variance from Cal/OSHA's recordkeeping requirements must petition California's Division of Labor Statistics and Research.

## V. HAZARDOUS CHEMICALS

Regulations pertaining to hazardous chemicals in California differ from Federal OSHA regulations in several respects. Employers need to be aware of differences in:

- the Hazard Communication Standard
- Proposition 65
- Permissible Exposure Levels
- Carcinogen reporting
- Asbestos registration
- Process Safety Management of Highly Hazardous Chemicals

### Hazard Communication

Cal/OSHA's Hazard Communication Standard, found in 8 CCR 5194, is similar to the federal standard found in 29 CFR 1910.1200, except that California's standard includes the following requirements:

- Material Safety Data Sheets must include the Chemical Abstracts Service (CAS) number of each hazardous chemical.
- Material Safety Data Sheets must describe potential health risks in lay terms.

### Proposition 65

California employers are subject to the requirements of Proposition 65 (Prop. 65), the Safe

Drinking Water and Toxic Enforcement Act, which was passed in 1986. The state's Hazard Communication standard was amended to include Prop. 65's provisions in 1991. Prop. 65 applies to employers located in California who have 10 or more employees, unless they are:

- Government employers—city, county, district, state, or federal government agencies.
- Operators of public water systems.

Under Prop. 65, the state publishes a list of Chemicals Known to the State to Cause Cancer or Reproductive Toxicity (found in 22 CCR 12000 and available for download at [www.oehha.ca.gov/prop65/prop65\\_list/Newlist.html](http://www.oehha.ca.gov/prop65/prop65_list/Newlist.html)). Employers with 10 or more employees must provide a warning whenever individuals are exposed to chemicals found on this list. If the chemical is covered under the Hazard Communication Standard, compliance with this standard's requirements is considered to be compliance with Prop. 65, as well. In practical terms, for most employers, this means that compliance with the Hazard Communication Standard is also compliance with Prop. 65. However, should your workers be exposed to a chemical on the Prop. 65 list that is not otherwise covered under the Hazard Communication Standard, you are required to provide clear and reasonable warning to those workers before they are exposed.

A "clear and reasonable warning," as required by Prop. 65, may be provided through labeling, posting signs, or other means. Warnings do not have to be provided if the exposure is low enough to pose no significant risk of cancer or will be well below levels that have been reported to cause reproductive harm. To assist companies in determining what those levels are, California's Office of Environmental Health Hazard Assessment publishes a list of "safe harbor numbers" (available at [www.oehha.ca.gov/prop65/getNSRLs.html](http://www.oehha.ca.gov/prop65/getNSRLs.html)).

### Permissible Exposure Levels (PELs)

In the 1980s, Federal OSHA revised its Z tables of hazardous substances and Permissible Exposure Levels to include additional chemicals found in California's standards. In 1989, a federal circuit court struck down the OSHA revisions, and OSHA rescinded the changes after this decision. California, however, retained its own tables and is required by state law to update them every two years.

Consequently, California has lower PELs than Federal OSHA for some substances (such as acetaldehyde, ammonia, carbon monoxide, ethyl bromide, hydrazine, and toluene) as well as PELs for other chemicals that Federal OSHA does not presently regulate (such as gasoline, welding fumes, wood dust, and potassium).

## Carcinogen Reporting

California employers whose employees handle carcinogenic substances must file a written Report of Use with the chief of the Division of Occupational Safety and Health (DOSH). The requirement is found in General Industry Safety Order Section 5203. Federal OSHA has no analogous requirement.

Reports must be filed for:

- all regulated carcinogens that specify a requirement for an employer to establish a regulated area
- regulated carcinogens that do not have a regulated area requirement, for any use of a concentration greater than 0.1 percent by weight or volume that results in exposure or potential exposure to employees.

Reports must include the following information:

- the name of the employer and the address of each workplace where a regulated carcinogen is in use
- an identifying description of where carcinogens are used in the workplace
- a brief description of each process or operation that creates employee exposure, including an estimate of the number of employees engaged in the process or operation
- the names and addresses of any collective bargaining units or other representatives of the affected employees

Initial use must be reported within 15 calendar days. Any changes in the reported information must be submitted within 15 calendar days of the change. Reports must be mailed to:

Occupational Carcinogen Control Unit  
Division of Occupational Safety and Health  
P.O. Box 420603  
San Francisco, CA 94142

**Temporary worksites.** Additional reports are required for temporary worksites using carcinogens. Besides the information above, these reports must include:

- the time and date work with carcinogens will begin
- the approximate duration of the work
- the location, type of business, and kind of work for each temporary worksite

Reports of temporary worksites where carcinogens will be used must be submitted to DOSH's nearest district office at least 24 hours before the work begins.

**Emergencies.** If employees are exposed to carcinogens because of equipment failure, control equipment failure, container rupture, or some other incident that results in the unexpected and potentially hazardous release of a carcinogen, this exposure must be reported within 24 hours. The report must include any facts available at the time the report is prepared, and must be submitted to the

nearest DOSH district office.

Within 15 calendar days after an emergency exposure occurs, a written report must be filed that includes:

- a description of the operation or process involved, including its location, the amount of regulated carcinogen released, and the duration of the emergency
- a statement of the known or estimated extent of employee exposure to the regulated carcinogen, and the area of contamination
- an analysis of the circumstances that led up to the emergency
- a description of the measures that have been or will be taken, with specific dates, to prevent similar occurrences

**Posting.** A copy of any carcinogen exposure report must be posted in the workplace in a spot that is readily available to affected employees. The reports for permanent and temporary worksites must remain posted until carcinogen use ceases. Emergency reports must be posted for at least 30 days after the date of filing.

## Asbestos Registration

If you are a California contractor who abates asbestos, or if you are a California employer whose employees may work with asbestos-containing materials, you may be required to register with the State of California. If you are planning to hire a contractor to perform asbestos-related work, you'll want to check to be sure any contractor you're considering is on DOSH's list of registered contractors.

Federal OSHA has no analogous requirement.

The registration requirement applies to:

- **Work with asbestos-containing materials.** This means any manufactured construction material that contains, by weight, more than 0.1 percent asbestos.
- **Asbestos-related work.** This applies to activities that may disturb asbestos-containing construction materials (ACCM) in a way that could release asbestos fibers into the air.
- **Large jobs.** The work must involve at least 100 square feet of ACCM at a single worksite. Contractors are not allowed to divide up a large job into increments less than 100 square feet to avoid the registration requirement; this is true even if the ACCM is located in separate areas.

Registered contractors or employers must notify the nearest Cal/OSHA District Office in writing at least 24 hours before beginning an asbestos abatement job, even if it involves less than 100 square feet of ACCM.

Contractors who are required to register may also have to complete asbestos licensing requirements administered by the Contractors State License Board.

Employers who will be performing work on their own property still have to register, even though they are not subject to the licensing board's requirements.

## Process Safety Management of Highly Hazardous Chemicals

Federal OSHA created 29 CFR 1910.119, Process Safety Management (PSM) of Highly Hazardous Chemicals (the federal Construction Standard equivalent is found in 29 CFR 1926.64), in May 1992. The standard was promulgated in the wake of catastrophic chemical releases that included the 1984 Bhopal, India, incident that killed more than 2,000 people; a 1989 Phillips 66 Chemical Plant incident that caused 24 deaths and 132 injuries; a 1990 Arco Chemical plant incident that killed 17; a 1990 BASF incident that resulted in 2 deaths and 41 injuries; and a 1991 IMC incident resulting in 8 deaths and 128 injuries. The standard is meant to address the safety of processes that involve certain highly hazardous chemicals listed in the standard's Appendix A. It requires employers to establish procedures that will prevent or minimize the consequences of chemical accidents.

California adopted its PSM standard, General Industry Safety Order 5189, based on the federal standard, but with a few differences:

- **Electrical supply and distribution systems.** Information about the equipment in the regulated process must include electrical supply and distribution systems.
- **Hazard analysis.** In addition to the federal requirements, the hazard analysis must identify any previous incident that had a likely potential for catastrophic consequences in the workplace. The final report containing the results of the hazard analysis for each process must be available in the respective work area for review by any person working in that area. The employer must consult with the affected employees—and, where appropriate, their representatives—on the development and conduct of hazard assessments.
- **Pre-startup safety review.** In addition to the federal requirements, the pre-startup safety review must involve employees with expertise in process operations and engineering. They must be selected based on their experience and understanding of the process systems being evaluated.
- **Incident reports.** The employer must establish a system to promptly address and resolve the incident report findings and recommendations. Report recommendations must be implemented in a timely manner, and action must be taken to prevent a recurrence. The employer must prepare a report and either provide a copy of the report

or communicate its contents to all employees and other personnel who work in the facility where the incident occurred.

## VI. ERGONOMICS

In July 1997, California became the first state to enact regulations aimed at preventing repetitive motion injuries (RMI). Federal OSHA promulgated an ergonomics rule in 2000, which was rescinded by an act of Congress in 2001. Federal OSHA has since created industry-specific voluntary guidelines for reducing repetitive motion injuries in the workplace. Citations for ergonomic hazards under Federal OSHA are issued under the General Duty Clause. Voluntary ergonomics guidelines exist for workers in the following industries:

- meatpacking
- retail grocery stores
- poultry processing
- nursing homes

**Program Requirements.** Cal/OSHA's ergonomics standard requires that employers with a history of work-related RMIs establish a program designed to reduce such injuries. The requirement applies to workplaces in which at least two employees have been diagnosed with a repetitive motion injury within the past 12 months, if:

- the RMIs were predominantly caused (50 percent or more) by a repetitive job, process, or operation
- employees incurring the RMIs were performing an identical work activity, such as word processing or assembly
- the RMIs were musculoskeletal injuries diagnosed by a licensed physician

An ergonomic injury prevention program must include:

- a worksite evaluation of each job, process, or operation of identical work activity that could cause repetitive motion injuries, such as work processing, assembly, or loading
- control measures that address these exposures, which should include engineering controls (such as workstation redesign) and administrative controls (such as job rotation, work pacing, or work breaks)
- employee training

**Training.** The training program must include discussions of:

- the employer's ergonomic injury prevention program
- the exposures that have been associated with RMIs
- the symptoms and consequences of injuries caused by repetitive motion
- the importance of reporting symptoms and injuries to the employer
- methods used by the employer to minimize RMIs. ■