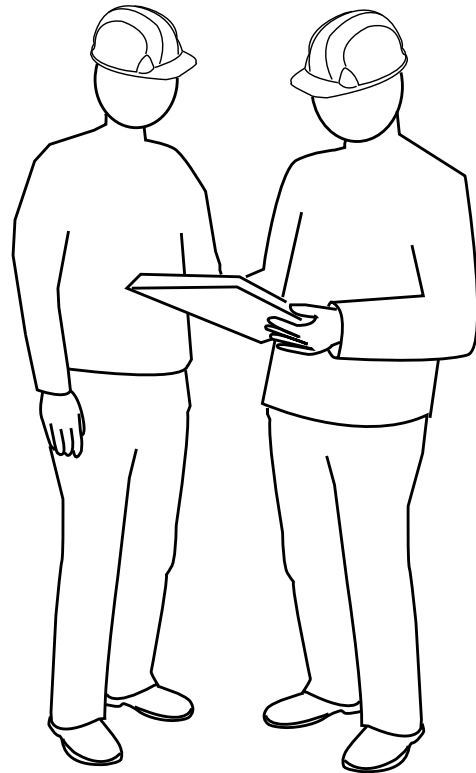


Guide to Managing Safety

For Employers and Supervisors

**In the Fruit and Vegetable Preserving and
Specialty Foods Manufacturing Industry**



KSTATE Research and
Extension
Kansas State University

*“Knowledge
for Life”*

Guide to Managing Safety

Contents

Lesson 1	
Preventing Injuries	3
Lesson 2	
Develop an Effective Safety Program	7
Lesson 3	
Safety Issues for a Diverse Workforce.....	15
Lesson 4	
Following Government Regulations.....	20
Conclusion	34
Quiz Yourself Answers	36

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Preventing Injuries in the Workplace

Safety: A Fundamental Business Responsibility

Federal and state laws require your business to provide a workplace that is free from safety and health hazards. Besides a general duty to provide a safe workplace, you must also observe a number of more specific regulations.

Consequences of not following government regulations can include:

- ▶ OSHA fines of up to \$70,000 per occurrence.
- ▶ Criminal charges.
- ▶ Jail time.
- ▶ Penalty of not less than \$5,000 for willfull violations.
- ▶ Civil action lawsuits brought on by injured employees.

Successful employers recognize that companies are more profitable when they avoid costly injuries and interruptions as a result of workplace accidents.

Success Story

In Medford, Wis., Kraft Pizza has seen many benefits while working toward and recently receiving OSHA's Voluntary Protection Programs' (VPP) star award for their worksite safety program. According to safety manager Judy Smith, those benefits include, "lowered worker compensation costs, better quality and increased productivity, and improved employee morale. The foremost benefit is that workers arrive home safe and healthy to families who needn't fear the tragedy of worker death, injury and illness."

Smith feels that nearly all occupational injuries, illnesses and property damage can be prevented by making everyone accountable for a safe work environment. At Kraft, employees at all levels actively participate in every aspect of accident prevention from safety training and following regulations to being directly involved in the safety process. The safety team at Kraft Pizza suggests that companies trying to improve safety "involve everyone in the company, starting with a solid commitment from top management. For a safety and health program to be most effective, all employees throughout the organization must actively support it."

Lesson 1

Objectives

1. Recognize basic workplace safety principles.
2. Identify common causes of serious injury and death in the fruit and vegetable preserving industry.
3. List the benefits of a safe working environment.

OSHA's Voluntary Protection Programs

Through the Voluntary Protection Programs (VPP), OSHA recognizes worksites with excellent safety and health management systems. To qualify for VPP, applicants must have in place an effective safety and health management system that meets all relevant OSHA standards. OSHA verifies qualifications with a rigorous performance-based evaluation and a comprehensive onsite review process. OSHA awards sites to one of the three programs: star, merit and star demonstration.

Organizations that achieve VPP status are recognized among the best in worker safety and health. Throughout this manual, you will read success stories from several organizations that have achieved status as a VPP.

VPP is a voluntary partnership with OSHA that can increase productivity, improve work environment, reduce injury and save lives. Involvement in VPP shows employees, industry, and the community you are a leader in safety and health and dedicated to improving the safety and health of your employees.

Basic Principles of Safety Management

1. No employee should risk injury or death to do a job.
2. Safety can and should be managed. Accident prevention leads to more efficient and profitable operations and improves the quality of life for employees.
3. Each employee has a right and responsibility to help in the ongoing safety improvement process. Encourage your employees to help identify and resolve safety concerns as they arise.

Accident Report

Worker's Hand and Arm Injured in Conveyor

Summary of OSHA Accident Investigation 111934287

A 16-year-old worker was working at the end of a belt conveyor. He tried to clean dried fruit from the conveyor rollers by reaching behind a guard while it was running. His left arm and hand were caught in the conveyor and severely injured.



The Department of Labor has specific restrictions on the type of work youth may perform. Do not permit employees to reach behind guards.

Common Causes of Serious Injury and Death

Lift trucks, machinery, and hazardous substances are major causes of injury and death in the fruit and vegetable preserving industry. Falls and back injuries account for many injuries as well.

Common incidents include:

- ▶ Employees caught in moving parts of machinery.
- ▶ Workers injured from falls.
- ▶ Workers killed from overturning lift trucks.
- ▶ Employees suffering back injuries from lifting materials.
- ▶ Employees injured from chemicals.
- ▶ Employees burned from hot liquids and steam.

You must work closely with your employees to establish safe work practices, and plan for each project to minimize the risk of tragic incidents.



Business Benefits of Managing Safety

An effective safety program will reduce accidents and costly injuries. Companies that demonstrate interest in employees through highly-visible safety programs find it easier to attract and retain loyal workers.

Financial Costs of Workplace Injuries Include:

- ▶ Medical bills.
- ▶ Ambulance service fees.
- ▶ Insurance premium increases.
- ▶ Lawsuits.
- ▶ Care for workers after they've been injured.
- ▶ Wages for time lost by employees who:
 - ▶ provide first aid.
 - ▶ stop to watch or talk about the incident.
 - ▶ clean up afterwards.
 - ▶ process insurance paperwork.
- ▶ Medical supplies.

Accident Report Employee Killed in Lift Truck Rollover

Summary of OSHA Accident Inspection 202043642

An employee was using a lift truck to adjust pallets, when he lost control of the lift truck due to brake failure. The lift truck began to tip, and he jumped out of the operator's seat when it rolled over. He was pinned under the cage and killed.



Train employees to operate equipment safely.

Intangible Costs of Workplace Injuries Include:

- ▶ Pain and suffering of the injured worker.
- ▶ Damaged public relations.
- ▶ Lowered employee morale.

Average Cost of Workers' Compensation Claims for Selected Injuries, 2001-2002:

(Costs include medical and indemnity payments)

◆ Broken bone or dislocation:	\$21,476
◆ Infection or Inflammation:	\$15,304
◆ Sprain or strain:	\$14,097
◆ Burn:	\$11,003
◆ Cut, puncture or scrape:	\$ 9,535

According to the National Safety Council, the average cost of a workers' compensation case in 2001-2002 was \$15,865 per claim.

Quiz Yourself

Circle the correct answer.

Answers can be found on page 36.

1. Consequences of not following government regulations can include:
 - a. criminal charges
 - b. jail time
 - c. OSHA fines up to \$70,000 per occurrence
 - d. All of the above

Select the correct answer for the following sentences from the list below.

- a. machinery
 - b. VPP
 - c. insurance premiums
 - d. employees
2. Work closely with your _____ to establish safe work practices.
 3. Workplace injuries may result in increased _____.
 4. Lift trucks, _____, and hazardous substances are major causes of injury and death in the fruit and vegetable preservation industry.
 5. To qualify for _____ applicants must have in place an effective safety and health management system that meets all relevant OSHA standards.

Develop an Effective Safety Program

Preventing accidents is essential to building a profitable business. A strong safety program shows concern for the employees' well-being. It creates a positive company image and can help an organization attract and retain workers. Safety is not a matter of luck; it is a management issue that requires time and effort.

To be effective, a safety program must involve employees in the decision-making process to help identify hazards and assist in solving problems.

Why Involve Employees in the Safety Process?

People must change their behavior to make a workplace safer. A safety program will work only if it has the cooperation and support of everyone who works there. Employees are more committed to a process when they know what is going on, are asked for their input and are given a voice in matters that affect them.

Success Story

Mt. Olive Pickle Company, a Carolina Star VPP, believes just that. Each employee will contribute to the safety program in a different way. From including employees in safety meetings to awarding prizes to those who correctly answer safety questions, Mt. Olive Pickle Company uses every opportunity to involve employees in workplace safety. They have consistently lowered their accident and illness rate since they began participating in VPP.

Safety manager Gordon Bennett has seen significant improvements in employee performance and financial benefits as well. "VPP has reduced the amount paid out annually in worker compensation insurance premiums," he said. Bennett believes "making unsafe condition reports available to all employees has made a huge impact on our workplace and has also provided employee involvement at all levels." When describing their OSHA recognized star safety program, Bennett says "It protects and improves the performance of our greatest asset, our employees."

Lesson 2

Objectives

1. Recognize the benefits of involving employees in developing a safety program.
2. Identify ways to create, implement and measure safety objectives.

Get Employees Involved in the Safety Process

Each employee will contribute to a safety program in different ways. Make sure there are many opportunities for each individual to participate. Here are some examples:

Safety Committee

The safety committee strongly influences the safety program. Include people who are respected, viewed as leaders by their peers and who are known for getting things done. Include people from all levels: managers, supervisors and workers. When selecting committee members, consider asking for volunteers. Periodically rotate people on and off the safety committee so different points of view can be expressed.

Safety Suggestions

Encourage employees to contact members of the safety committee any time they have suggestions about how to make the workplace safer. Ensure employees know who the committee members are and how to contact them.

Incident Reports

Encourage employees to file reports if there is an injury, close-call or a problem that needs to be corrected. Make sure they know how to accurately submit reports to make the process easy and blame-free.

Incident Investigation Teams

Investigating incidents can provide valuable information, but requires tact and good judgment. Teams must be trained to gather information that will prevent future incidents without allowing the process to turn into fault-finding.

Problem Solving Teams

When a concern arises, temporarily assemble a group of employees, with various points of view, to find ways to solve the problem.

Safety Equipment Selection

Be sure to get the input of employees who will be using the equipment and allow them to try it out, if possible, before buying.

Contests

Encourage friendly competition among work groups. Keep in mind that if the contest rewards work groups for being accident-free, employees may be discouraged from reporting injuries. To avoid this problem, make sure your contests provide rewards for positive safety initiatives without discouraging accident reporting.

Safety Reviews

Include people with a variety of backgrounds to evaluate new programs, activities, equipment and facilities during the planning stage, when problems can be solved with the least expense.

Safety Meetings

Frequent safety meetings give employees a chance to express their views and bring attention to important concerns.

Surveys/Questionnaires

These are more formal methods for receiving input. All responses should be anonymous.

Face-to-Face Communication

Safety leaders should visit with employees frequently to discuss concerns.

Respond When Employees Get Involved

1. Listen to what employees have to say.
2. Let everyone express their opinions, even if you do not agree.
3. Make timely, appropriate responses to every suggestion. When it is not possible to make changes, explain the situation, let employees know you appreciate their input and explain any plans for addressing the issue in the future.
4. Never discourage anyone from making suggestions or from reporting injuries and unsafe conditions. Let them know you appreciate each suggestion.

Contest Ideas

See which crew can:

- ♦Get the most people trained.
- ♦Correct the most hazards.
- ♦Submit the best safety suggestions.
- ♦Report the most near-misses.

Establish Worthwhile Safety Objectives

Objectives are the “plan of action” your workplace will use to create a successful safety program. Each objective should describe an action you will take or a hazard you will correct. For example: Provide personal protective equipment and training for employees who work around hazardous substances.

- ▶ **Consider many sources of information.** Base objectives on employee suggestions, accident history, regulations, known hazards, industry standards, self-inspections and other relevant sources.
- ▶ **Eliminate the most serious hazards first.** Prioritize your efforts by ranking concerns according to both the likelihood and severity of an injury.
- ▶ **Establish clear objectives and divide the process.** Break the process into small steps so your objectives are easier to achieve.
- ▶ **Create a realistic and responsible schedule.** Take on enough projects to make a meaningful difference, but don't take on so much that you fail to meet your objectives.
- ▶ **Don't limit your objectives to existing hazards.** Review proposed new activities, programs, procedures, equipment and facilities to identify new hazards before they occur.

Accomplish Your Safety Objectives

A combination of approaches is necessary to accomplish your objectives to make the workplace safer.

Elimination or Control of Hazards

You may need to alter or replace equipment, use less hazardous materials, mechanize hazardous tasks, enclose hazards behind barriers, etc.

Training

Inform employees of hazards and teach them how to avoid injury on the job.

Accident Report

Worker's Finger Amputated While Cleaning Conveyor

Summary of OSHA Accident Investigation 170681944

A worker was cleaning an overhead conveyor while it was running. He lifted a shield and reached into the conveyor. His little finger was cut off by moving gears.



Instruct workers to never open guards and shields while a machine is running. Advise them to always shut down and lock out power first.

Workplace Procedures

Change the way work is performed to reduce the risk to employees. Limit the number of people who are allowed to perform hazardous tasks, use chemicals at times when fewer people are in the area or limit the amount of time a worker can be exposed to heat, chemicals, vibration and other hazards.

Personal Protective Equipment

Use safety glasses, hard hats, safety shoes, ear plugs, chemical-resistant gloves, respirators, etc. to protect employees.

When Helping Others Change Behaviors, Ask Yourself:

- Have they been trained?
- Have they been told what specific actions to take?
- Have they been recognized for doing things right?
- Have they been corrected if their behaviors are unsafe?

Measure Your Accomplishments

It will take time to reduce injury rates. A good safety program will reduce the number of severe injuries, even if there is an increase in the number of minor incidents reported.

Focus on Success

Measure accomplishments such as the number and/or quality of:

- ▶ Hazards corrected
- ▶ Safety inspections and reviews
- ▶ Safety meetings and training
- ▶ Safety improvements to procedures and equipment
- ▶ Safety suggestions received
- ▶ Reports of near-misses
- ▶ Housekeeping improvements
- ▶ Safe behaviors exhibited by employees
- ▶ Risk assessments completed
- ▶ Incidents investigated
- ▶ Problems solved

Keep the Ball Rolling

At least once a year, evaluate your program and set new goals. Identify what has worked and keep it up. Decide what didn't work, find out why and make the necessary adjustments.

Success Story

“Management sets the standard and represents safety in all areas,” states Health, Safety and Environmental Technician Delia Dias of California’s VPP Tropicana. “For example, management follows all personal protective equipment standards while on the plant floor, they provide resources for training and learning and speak about the progress and goals at the communication meeting.”

Tropicana has creative tools for encouraging and rewarding safety in their plant. Dias shared a few of their successful safety ideas, including “The Safety Hall of Fame” that rewards employee accomplishments in safety by engraving their name on a plaque.

“We also recognize those employees who are involved in reviewing processes or attending meetings and training that we call Safety Training And Recognition Systems (S.T.A.R.S.). Together we celebrate the employees’ achievements annually in a luncheon and we invite a CAL OSHA representative to speak,” Dias said. Dias credits their improved safety program to making their Tropicana plant “the preferred company when it comes to on-boarding new employees and working with other vendors.”

Document Accomplishments

Safety is achieved in successive steps and a written record will be a valuable reminder of how far you've come.

- ▶ Document and publicize each accomplishment.
- ▶ Ensure everyone knows what has been achieved.
- ▶ Keep an ongoing record of hazards identified, actions taken and progress made.

Lead by Example

Effective leaders influence others by providing information, showing others that change is in their best interest, challenging them to do better and providing a dependable example.

Make sure employees understand why they need to change and exactly what is expected.

The influence you have on others will depend not only on what you say, but also what you do. People will follow your lead only if your daily decisions and actions are consistent with your message.

Take time to listen to others' perspectives and make sure you understand the entire situation before you give advice. People will be more open with you if they know you won't jump to the wrong conclusions.

Don't drop the ball. If you promise to do something, do it and always take responsibility when you make a mistake.

Don't blame employees for accidents. If an accident occurs, wait until the dust settles then give the employee a chance to show what was learned by asking a question such as, "What can we do to keep this from happening again?" You will probably find that the employee learned from the incident and will be more likely to approach you about important issues in the future.

For more information about OSHA's VPP or how to apply, you can contact your nearest VPP Manager through OSHA's regional and area offices. For agency regional and area office locations, state contacts, and more about VPP, log onto OSHA's Web site, <http://www.osha.gov/dcsp/vpp/index.html>

Quiz Yourself

Answers can be found on page 36.

Select the correct answer for the following sentences from the list below.

- a. severe
 - b. do
 - c. record
 - d. hazardous
 - e. once
 - f. discourage
1. The influence you have on others will depend not only on what you say, but also what you _____.
 2. A good safety program will decrease the number of _____ injuries, even if there is an increase in the number of minor incidents reported.
 3. At least _____ a year, evaluate your program and set new goals.
 4. Never _____ anyone from making suggestions or reporting injuries and unsafe conditions.
 5. Keep a _____ of hazards identified, actions taken and progress made.
 6. Make your workplace safer by limiting the number of employees allowed to perform _____ tasks.

Safety Issues for a Diverse Workforce

As employers and supervisors, you must adapt your management strategies to fit the needs of a diverse workforce.

Never tolerate harassment or discrimination in the workplace. Besides the legal consequences, harassment and discrimination can lead to emotional stress, distraction, lowered productivity and an increase in job-related injuries and illnesses.

You must also keep in mind that different cultural backgrounds can affect an employee's understanding of and sensitivity to safety issues.

Language Barriers

You must ensure that each employee understands how to work safely. Employees who do not understand instructions that are given in English may nod in agreement, or say yes, even when they do not fully understand what is being said. As a result, they may begin a job without knowing the safest way to perform the work.

When training employees, always demonstrate a task — don't just talk about it. Next, ask the workers to show you how to perform the same task.

Bilingual employees can be especially helpful for providing work instructions and training. In large workforces, bilingual mentors should be easy to identify. An example is to have mentors wear a different colored hard hat so they are easily spotted among other employees.

Be aware that some workers may not have the reading skills to comprehend training materials, even if they are written in their native language. It can be helpful to partner new employees with more experienced workers who speak their language. This type of hands-on training is one of the most effective methods for teaching job skills to low-literacy workers.

Lesson 3

Objectives

1. Identify cultural differences in the workplace.
2. Recognize government requirements for young workers.

Questions to Ask Workers:

- Was safety considered important where you worked before?
- What safety rules are you used to observing?
- Can you tell me some reasons why people don't always work safely?

Cultural Diversity

Attitudes about safety vary from culture to culture. Open the lines of communication so employees fully understand that safety is important in your company.

- ▶ Ask them how they view the importance of safety at work.
- ▶ Make sure they understand your expectations.
- ▶ Have open discussions to resolve any misunderstandings of company safety policies.

Many workers may do whatever it takes to get the job done — even if that means taking risks.

In many cultures, it is considered disrespectful to question persons in positions of authority. Therefore, some workers may carry out instructions even when obvious dangers are present. Visit with your workers often about their responsibility to speak up when they encounter a problem.

Remember: The best way to establish trust with workers is to develop strong personal relationships and treat everyone fairly.

Gender Differences

Employers and supervisors must realize how gender affects the safety needs and expectations of the workforce. Some important considerations include:

- ▶ Provide equipment and tools of various sizes. Make sure the tool fits the worker, don't try to make the worker fit the tool.
- ▶ During the initial training period, provide an opportunity for new employees to partner with experienced employees of the same gender, if possible. Encourage all experienced employees to share their knowledge with everyone on the job — including those of the opposite gender.
- ▶ Some pesticides and other hazardous chemicals can be harmful to fetuses and reproductive organs. Make sure all workers (male and female) are informed of any reproductive hazards they face and allow them to take appropriate precautions.
- ▶ Ensure private, clean restroom facilities with hand washing supplies nearby. For unisex restrooms, ensure the door has a lock.

The Aging Workforce

Research shows that older workers, on average, are NOT more likely than others to be involved in accidents. Older workers do, however, have a higher rate of injuries from falls than younger workers.

Older employees often have advanced knowledge, skills and judgment abilities that make them especially valuable in the workplace. Encourage them to participate in company decision processes and to contribute any ideas they might have. Challenge them to share their wisdom with younger workers who are just starting out.

Young Workers

The following actions should be taken by supervisors to protect young workers.

- ▶ Evaluate every job in advance to determine if young workers can perform it safely.
- ▶ Less experienced employees may not transfer a concept from one situation to another. It is especially important for young workers to successfully complete job-specific safety training before performing any new duties. This training should be repeated periodically and when there are changes in work procedures and equipment.
- ▶ Take time to point out hazards whenever they are encountered. Inexperienced workers may not realize that a hazard exists even when it is obvious to a longterm employee.
- ▶ Always model the appropriate behavior. Everyone learns by observing — if long-term employees take dangerous shortcuts, so will young workers.

Hazardous and Prohibited Occupations

The U.S. Department of Labor has established restrictions on the type of work that may be performed by youth under 18 years of age. The rules may vary somewhat depending on the nature of your business and the state in which you operate. Employers should contact their state department of labor or visit the U.S. Department of Labor Web site: <http://www.youthrules.dol.gov/employers/default.htm>.

Youth under age 18 are prohibited from the following (exceptions are allowed in some circumstances, visit the U.S. Department of Labor Web site for more details):

- ▶ Power-driven hoisting apparatus, including forklifts.
- ▶ Power-driven bakery machines.
- ▶ Power-driven metal-forming, punching and shearing machines.
- ▶ Other operations as specified by the Department of Labor.

Youth ages 14-15 are prohibited from the operations listed above, plus the following:

- ▶ Manufacturing.
- ▶ Transportation of persons or property.
- ▶ Construction or repair jobs.
- ▶ Power-driven machinery or hoisting apparatus other than typical office machines.
- ▶ Processing jobs.
- ▶ Workrooms where products are manufactured or processed.
- ▶ Warehousing and storage.
- ▶ Other operations as specified by the Department of Labor.
- ▶ Youth ages 14-15 also have restrictions on the amount of hours and time of day they may work.

Quiz Yourself

Answers can be found on page 37.

Select the correct answer for the following sentences from the list below.

- a. demonstrate
 - b. harassment
 - c. trust
 - d. shortcuts
 - e. youth
1. Everyone learns by observing; if long-term employees take dangerous _____, so will young workers.
 2. The Department of Labor has established restrictions on the type of work that may be performed by _____ under 18 years of age.
 3. When training employees, always _____ the task.
 4. Never tolerate _____ in the workplace.
 5. The best way to establish _____ with workers is to develop strong personal relationships and treat everyone fairly.

Lesson 4

Objective

1. Identify government regulations related to the 10 most common OSHA citations.

Following Government Regulations

OSHA and other agencies have established standards to promote safety and health in the workplace. Employers must observe these regulations in order to minimize the risk of injury to workers. Failure to protect worker safety can result in devastating business losses due to the cost of accidents as well as fines imposed by government agencies.

Occupational Safety and Health Administration (OSHA)

You can get help complying with OSHA regulations by contacting your regional OSHA office or by visiting the OSHA Web site at <http://www.osha.gov>

Transportation Safety Resources

State and local traffic laws and drivers licensing requirements must be observed. If your company operates commercial motor vehicles, the operators may be required to have commercial driver's licenses and undergo drug and alcohol testing. Information is available from the Federal Motor Carriers Safety Administration's Web site at <http://www.fmcsa.dot.gov>.

Other Resources

Depending on your work activities and geographical location, you may also need to comply with regulations administered by other agencies. The local Chamber of Commerce, state Cooperative Extension Service and state or local economic development agencies can be good sources of information regarding business laws and regulations in your area. For a listing of Extension offices, visit the Web site of Cooperative State Research, Education and Extension Service at <http://www.csrees.usda.gov>.

10 Most Common OSHA Violations in Fruit and Vegetable Preserving and Specialty Manufacturing

During OSHA inspections of fruit and vegetable preserving and specialty manufacturing worksites, in fiscal year 2004, the 10 most commonly-cited safety regulations were as follows:

1. The Control of Hazardous Energy, Lockout/Tagout (29 CFR 1910.147)

The lockout/tagout standard contains many requirements to protect workers when they repair, service or perform maintenance on equipment with moving parts or hazardous power sources such as hydraulics or electricity. When servicing machines and equipment commonly used in the fruit and vegetable preserving industry, power must be shut off. Precautions should be taken to prevent the equipment from starting up and additional measures may be required to protect workers from moving parts and hazardous power sources. The lockout/tagout standard requires employers to:

- ▶ Develop a written energy control program.
- ▶ Use locks to keep equipment from being started accidentally during service and maintenance. Note: tags are allowed instead of locks in some cases.
- ▶ Use energy control procedures to ensure the safety of employees who service and repair equipment.
- ▶ Periodically inspect the workplace to make sure lockout/tagout procedures are being used and correct any problems noted.
- ▶ Provide training and information to employees who are involved in, affected by or located in areas where equipment is serviced or maintained.

Compliance Guidelines

Practical guidance for complying with the lockout/tagout standard can be found on the Web:

OSHA Publication 3120 2002 (Revised)

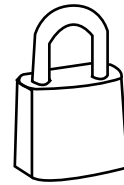
Control of Hazardous Energy: Lockout/Tagout
<http://www.osha.gov/Publications/osha3120.pdf>

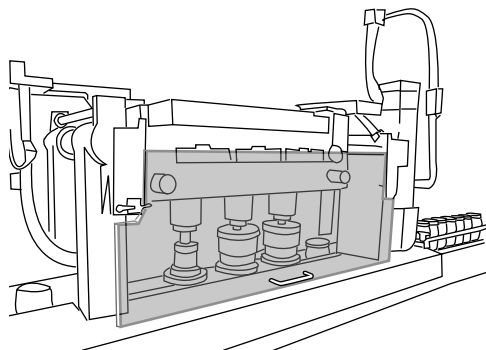
OSHA Lockout/Tagout Web page

<http://www.osha.gov/SLTC/controlhazardousenergy/index.html>

OSHA Lockout/Tagout e-Tool

<http://www.osha.gov/dts/osta/lototraining/index.html>





A shield covers this point of operation.

2. Machines, General Requirements (29 CFR 1910.212)

The standard for machine guarding requires employers protect workers from hazardous machine parts and hazards such as those created by point of operation, nip points, rotating parts, and flying chips.

Point of Operation

▶ is where the work of the machine is being performed.

Nip Points/Rotating Parts

▶ occur when parts rotate toward each other. Machines with rollers, belts, pulleys, chains, sprockets and rack and pinions all have nip points.

Flying Chips

▶ result when material is being processed.

Examples of guarding methods:

- ▶ Barrier guards block danger zones.
- ▶ Two-hand tripping devices ensure the operator has both hands on the controls to start the machine and away from the point of operation.
- ▶ Electronic sensors shut down the machine or block it from starting when the operator is near a danger zone.

Accident Report

Worker's Arm Broken in Conveyor Nip Point

Summary of OSHA Accident Investigation 119797710

A cleanup worker was using a high-pressure water hose to clean the pulley of a conveyor while it was running. The conveyor had a guard, but it was not fully attached. The employee reached around the guard and her arm was pulled in and broken in three places.



Protect employees from machine hazards. Make sure all guards are secured in place.

Compliance Guidelines

Practical guidelines for complying with the machine, general requirements standard can be found on the Web:

OSHA Publication 3067 1992

Concepts and Techniques of Machine Safeguarding.

<http://www.osha.gov/Publications/osha3067.pdf>

OSHA Publication 3170 2001

Safeguarding Equipment and Protecting Workers from Amputations.

<http://www.osha.gov/Publications/osha3170.pdf>

OSHA Machine Guarding Web page

<http://www.osha.gov/SLTC/machineguarding/index.html>

OSHA Machine Guarding e-Tool

<http://www.osha.gov/SLTC/etools/machineguarding/index.html>

3. Mechanical Power-Transmission Apparatus (29 CFR 1910.219)

This standard describes how to guard machines and parts. In general, you must guard any part that is seven feet or less above the floor or working platform. Guards should be designed to allow oiling and maintenance without removal of guards. The following parts should be guarded:

- ▶ Power-transmission belts
- ▶ Flywheels
- ▶ Cranks, connecting rods, tail rods, and extension piston rods
- ▶ Shafting

The standard contains requirements for maintenance, guarding and safe operation of:

- ▶ Pulleys
- ▶ Belt, rope and chain drives
- ▶ Gears, sprockets and chains
- ▶ Friction drives
- ▶ Keys, setscrews and other projections
- ▶ Collars and couplings
- ▶ Bearings and facilities for oiling
- ▶ Clutches, cutoff couplings and clutch pulleys
- ▶ Belt shifters, clutches, shippers, poles, perches and fasteners

Compliance Guidelines

Practical guidelines for complying with the mechanical power-transmission apparatus standard can be found on the Web:

OSHA Publication 3067 1992

Concepts and Techniques of Machine Safeguarding.
<http://www.osha.gov/Publications/osha3067.pdf>

OSHA Publication 3170 2001

Safeguarding Equipment and Protecting Workers from Amputations.
<http://www.osha.gov/Publications/osha3170.pdf>

OSHA Machine Guarding Web page

<http://www.osha.gov/SLTC/machineguarding/index.html>

OSHA Machine Guarding e-Tool

<http://www.osha.gov/SLTC/etools/machineguarding/index.html>

4. Respiratory Protection (29 CFR 1910.134)

Employers may be required to provide respiratory protection if workers are exposed to hazardous airborne dusts, vapors, gases, mists or fumes. When engineering controls cannot protect employees from these respiratory hazards and respirators must be worn, the respiratory protection standard must be followed.

The employer must provide respirators appropriate for the job. The employer is also responsible for developing and implementing a written respiratory protection program.

The program must be updated as necessary and include the following:

- ▶ annual medical exam for employees who wear negative pressure respirators.
- ▶ annual fit test for all employees who wear negative pressure respirators.
- ▶ procedures for selecting respirators that are appropriate for the hazard.
- ▶ procedures for care and maintenance of respirators.
- ▶ procedures for proper use of respirators in routine and potential emergency situations.

Compliance Guidelines

Requirements are extensive, but practical guidelines for complying with the respiratory protection standard can be found on the Web:

Small Entity Compliance Guide for Respiratory Protection Standard

<http://www.osha.gov/Publications/secgrev-current.pdf>

OSHA Respiratory Protection Standard

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=12716

OSHA Respiratory Protection e-Tool

<http://www.osha.gov/SLTC/etools/respiratory/index.html>

5. Permit Required Confined Spaces (29 CFR 1910.146)

Employers must protect employees from the hazards of entry in permit-required confined spaces.

Confined spaces have **ALL** of the following characteristics:

- ▶ Limited ways to enter or exit the space.
- ▶ Large enough for an employee to enter.
- ▶ Not designed for continuous work.

A permit-required confined space is a confined space that has **ONE OR MORE** of the following characteristics:

- ▶ contains or has a potential to contain a hazardous atmosphere,
- ▶ contains a material that has the potential for engulfing an entrant,
- ▶ has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section, or
- ▶ contains any other recognized serious safety or health hazards.

Some common confined spaces in the fruit and vegetable preserving industry include:

- ▶ hoppers
- ▶ mixers
- ▶ digesters
- ▶ boilers
- ▶ pits
- ▶ freezers
- ▶ vats
- ▶ storage tanks
- ▶ underground vaults
- ▶ degreasers
- ▶ silos
- ▶ tunnels

The employer must evaluate the workplace to determine if any spaces are permit-required confined spaces. If the workplace contains permit spaces, the employer must inform exposed employees of the existence, location and the danger of the permit spaces.

If the employer decides that employees **CANNOT** enter permit spaces the employer must take measures to prevent employees from entering. If the employer decides that employees **CAN** enter permit spaces, the employer must develop and implement a written permit space program. Among other things, the OSHA standard requires the employer's program to:

- ▶ Identify and evaluate permit space hazards before allowing employee entry.
- ▶ Implement necessary measures to prevent unauthorized entry.
- ▶ Establish a system for the use of entry permits.
- ▶ Implement appropriate procedures for rescue and emergency services.



Employees may not enter a permit confined space until they have been trained, have an approved permit, and have the proper procedures in place.

- ▶ Test conditions in the permit space before entry operations and monitor the space during entry.
- ▶ Provide personal protective equipment and any other equipment necessary for safe entry.
- ▶ Ensure that at least one attendant is stationed outside the permit space for the duration of entry operations.
- ▶ Review established entry operations and annually revise the permit-space entry program.

Compliance Guidelines

Practical guidelines for complying with the permit required confined spaces standard can be found on the Web:

OSHA Confined Spaces Web page

<http://www.osha.gov/SLTC/confinedspaces/index.html>

OSHA Small Business Outreach Training

<http://www.osha.gov/dcsp/smallbusiness/index.html>

OSHA Construction-Confined Space Web Page

<http://www.osha.gov/SLTC/confinedspaces/construction.html>

Accident Report

Worker Overcome in Nitrogen Filled Tank

Summary of OSHA Accident Investigation 119831063

A worker entered a syrup tank that had been cleaned with liquid nitrogen. The worker did not ventilate the tank and did not follow confined space permit procedures. He was not wearing personal protective equipment and was overcome because of the low oxygen content inside the tank. He had to be rescued from the tank and was taken to the hospital for observation.



Train your employees on the dangers of confined spaces and follow your written permit space program.

6. Electrical, Wiring Methods, Components and Equipment (29 CFR 1910.305)

The electrical, wiring methods, components and equipment standard gives specific requirements for employers in the safe design of electrical systems including the following:

- ▶ Metal raceways and enclosures
- ▶ Ducts
- ▶ Temporary wiring
- ▶ Branch circuits
- ▶ Cable trays
- ▶ Insulators-open wiring
- ▶ Cabinets, boxes and fittings
- ▶ Conductors – general wiring
- ▶ Flexible cords and cables
- ▶ Fixture wires

Compliance Guidelines

Practical guidance for complying with the electrical, wiring methods, components and equipment standard can be found on the Web:

OSHA Electrical Standard

<http://www.osha.gov/SLTC/electrical/standards.html>

OSHA Publication 3075 2002,

Controlling Electrical Hazards.

<http://www.osha.gov/Publications/osha3075.pdf>

NIOSH Electrical Safety Web Page

<http://www.cdc.gov/niosh/injury/traumaelec.html>

7. Hazard Communication (29 CFR 1910.1200)

The hazard communication standard requires employers to inform workers about the hazards of chemicals in the workplace. Chemicals that are commonly used in the fruit and vegetable preserving industry include cleaning solvents, lubricants, fuels and other hazardous substances. Employer obligations include the following:

- ▶ Develop a written hazard communication program.
- ▶ Discuss chemicals with other employers on the worksite.
- ▶ Make sure chemical containers are labeled.
- ▶ Make employees aware of chemical hazards that could result from any non-routine tasks or activities involving unlabeled pipes.

Accident Report

Employee Burned by Boiling Water and Caustic Soda

Summary of OSHA Accident Investigation 111878476

An employee was cleaning the inside of a pressure cooker. He turned on the water and steam to fill the cooker. Then he added caustic soda as a cleaning agent. The caustic soda reacted violently with the hot water and steam causing the mixture to spew out on the employee, burning him severely.



Provide your employees with necessary training and personal protective equipment when working around hazardous substances.

- ▶ Compile a list of all hazardous chemicals in the workplace and ensure that each can be matched to the appropriate Material Safety Data Sheet (MSDS)
- ▶ Ensure that MSDSs are readily accessible in the workplace for each hazardous chemical in use.
- ▶ Provide workers with information and training on hazardous chemicals.

Compliance Guidelines

Practical guidance for complying with the hazard communication standard can be found on the Web:

OSHA Publication 3111 2000 (Reprinted)

Hazard Communication Guidelines for Compliance
<http://www.osha.gov/Publications/osh3111.pdf>

OSHA Publication 3084 1998 (Revised)

Chemical Hazard Communication
<http://www.osha.gov/Publications/osh3084.pdf>

8. Powered Industrial Trucks (29 CFR 1910.178)

The powered industrial truck standard contains requirements for design, maintenance and use of lift trucks, motorized pallet jacks and other specialized industrialized trucks.

Accident Report Employee Injured When Lift Truck Overturns

Summary of OSHA Accident Inspection 000785469

An employee was moving an empty trash bin with a lift truck. He was driving with the load elevated. The truck tipped over, and the employee's leg was crushed between the lift truck's mast and the concrete roadway. His leg was amputated above the knee, and he also suffered a broken arm.



You must certify that each operator has been trained and evaluated on the safe operation of a powered industrial truck.

Before employees are assigned to operate a powered industrial truck, the employer must ensure they are at least 18 years old and appropriately trained. An evaluation of each powered industrial truck operator's performance shall be conducted at least once every three years. The employer shall certify that each operator has been trained and evaluated. The certification shall include the name of the operator, the date of the training, the date of the evaluation and the identity of the person(s) performing the training or evaluation.

The standard gives additional requirements, in detail, for the following:

- ▶ safety guards
- ▶ fuel handling and storage
- ▶ changing and charging storage batteries
- ▶ lighting for operating areas
- ▶ fire protection
- ▶ modifications and additions affecting capacity and operation
- ▶ safe operation

Compliance Guidelines

Practical guidance for complying with powered industrial trucks standard can be found on the Web:

OSHA Powered Industrial Trucks Web page

<http://www.osha.gov/SLTC/poweredinustrialtrucks/index.html>

OSHA Sample Daily Checklist for Powered Industrial Trucks

http://www.osha.gov/dcsplote/trng-materials/pit/daily_pit_checklist.html

9. Personal Protective Equipment (29 CFR 1910.132)

This standard requires employers to provide Personal Protective Equipment (PPE). Employers must conduct an assessment to determine what PPE is necessary. They must also make sure PPE is appropriate, that it fits properly and that it is adequately maintained. Finally, employers must provide training to workers. In the fruit and vegetable preserving industry, PPE commonly includes items such as:

Safety Glasses or Goggles

Eye protection may be required when workers are exposed to flying particles, impact by objects, chemicals, and other eye hazards.

Accident Report

Employee Hospitalized from Caustic Soda Splash to Face

Summary of OSHA Accident Investigation 127364776

An employee was loosening a drain trap to repair it. The drain trap contained caustic soda. When it came loose, caustic soda splashed his nose, mouth and eyes. He was hospitalized for burns.



Provide your employees with necessary training and personal protective equipment when working around hazardous substances.

Gloves

Appropriate gloves may be required when workers are at risk of exposure to sharp edges, chemicals, burning surfaces, electrical current and other hazards.

Hearing Protection

Ear plugs or muffs must *be available* if workers are exposed to noise levels that average 85 decibels (dB) or more for an 8-hour workday. Ear plugs or muffs must *be worn* if workers are exposed to noise levels that average 90dB or more during the workday (employees who have not had a baseline audiogram *must wear* hearing protection if the 8-hour average is 85 dB or more).

Footwear

Protective footwear may be required when workers are at risk of injury due to falling or rolling objects, crushing or penetrating materials or electrical hazards.

Hard Hats

Head protection may be required when workers encounter falling objects or electrical current.

Face Shields

Face protection may be required when workers are exposed to flying particles, impact by objects, chemicals, welding and other hazards.

Respirators

Respiratory protection may be required if workers are exposed to hazardous airborne dusts, vapors, gases, mists or fumes.

Compliance Guidelines

Practical guidelines for complying with the personal protective equipment standard can be found on the Web:

OSHA Publication 3151-12R 2003,

Personal Protective Equipment

<http://www.osha.gov/Publications/osha3151.pdf>

OSHA PPE Web page

<http://www.osha.gov/SLTC/personalprotectiveequipment/index.html>

10. Guarding Floor and Wall Openings and Holes (29 CFR 1910.23)

This standard requires you to protect your employees from floor and wall openings and holes.

Accident Report Employee Killed in Fall

Summary of OSHA Accident Investigation 170865810

Several employees were laying tarp on the roof of a building. An employee fell through an opening in the roof onto the concrete floor. She was hospitalized with severe head, back and rib injuries and died five days later.



Protect your employees from falls by guarding or securely covering all holes and openings.

The standard includes requirements for the design and placement of railings, covers and other guards related to:

- ▶ Stairway floor openings
- ▶ Ladderway floor openings or platform
- ▶ Hatchway and chute floor openings
- ▶ Skylight floor openings and holes
- ▶ Pit and trapdoor floor openings
- ▶ Manhole floor openings
- ▶ Temporary floor openings
- ▶ Wall openings
- ▶ Open-sided floors or platforms

Compliance Guidelines

Practical guidance for complying with guarding floor and wall openings and holes standard can be found on the Web:

OSHA Walking/Working Surfaces

<http://www.osha.gov/SLTC/walkingworkingsurfaces/index.html>

OSHA Small Business Handbook

<http://www.osha.gov/dcsp/smallbusiness/small-business.html>

Quiz Yourself

Answers can be found on page 37.

Circle the correct answer.

1. Some of the most common OSHA citations in the fruit and vegetable preserving industry are:
 - a. personal protective equipment
 - b. hazard communication
 - c. mechanical power-transmission apparatus
 - d. all of the above

Select the correct answer for the following sentences from the list below.

- a. removal
 - b. chemical containers
 - c. three
 - d. guard
2. An evaluation of each powered industrial truck operator's performance must be conducted at least once every _____ years.
 3. The hazard communication standard requires employers to make sure _____ are labeled.
 4. Guards should be designed to allow oiling and maintenance without _____ of guards.
 5. In general, you must _____ any power-transmission belt that is seven feet or less above the floor or working platform.

Conclusion

Managing safety is your responsibility. Creating a successful safety program and properly training employees will lead to a safer, more profitable business.

You have been presented with safety tips, guidelines, information resources and exercises designed to help you manage your company's safety program. Use this information to keep you and your employees safe.

Success Story

VPP Star site Tropicana in Fort Pierce, FL has improved their company's safety program. Health, safety and environmental technician Dian Meade has seen improvements in employee ownership, reduced injury rate, better documentation and reporting from employees on near misses and first aid incidents. "Employee commitment can be an obstacle, but also a motivation for their company to keep safety as a value not a destination. We can always improve." She adds, "Don't let the safety department run the employee safety committee but give a budget, set goals and allow the employees to take ownership."

For better proactive response to safety issues, training and programs, Tropicana suggests developing partnerships among management, employees and OSHA. Meade believes companies should "empower and encourage employees to recommend and make safety changes."

Quiz Yourself

Answers can be found on page 38.

Circle the correct answer.

1. Financial costs of workplace injuries include:
 - a. medical bills
 - b. lawsuits
 - c. insurance premium increases
 - d. all of the above

2. Some of the most common OSHA citations in the fruit and vegetable preserving industry include:
 - a. respiratory protection
 - b. the control of hazardous energy, lockout/tagout
 - c. powered industrial trucks
 - d. all of the above

Select the correct answer for the following sentences from the list below.

- a. evaluate
 - b. lockout/tagout
 - c. voluntary
 - d. once
-
3. VPP is a _____ partnership with OSHA that can increase productivity, improve the work environment, reduce injuries and save lives.

 4. At least _____ a year, evaluate your program and set new goals.

 5. The _____ standard contains many requirements to protect workers when they repair, service or perform maintenance on equipment with moving parts or hazardous power sources

 6. The employer must _____ the workplace to determine if any spaces are permit-required confined places.

Quiz Yourself Answers

Lesson 1, Page 6

1. Consequences of not following government regulations can include:
 - a. criminal charges
 - b. jail time
 - c. OSHA fines up to \$70,000 per occurrence
 - d. All of the above

Select the correct answer for the following sentences from the list below.

- a. machinery
 - b. VPP
 - c. insurance premiums
 - d. employees
2. Work closely with your d to establish safe work practices.
 3. Workplace injuries may result in increased c.
 4. Lift trucks, a, and hazardous substances are major causes of injury and death in the fruit and vegetable preservation industry.
 5. To qualify for b applicants must have in place an effective safety and health management system that meets all relevant OSHA standards.

Lesson 2, Page 14

Select the correct answer for the following sentences from the list below.

- a. severe
 - b. do
 - c. record
 - d. hazardous
 - e. once
 - f. discourage
1. The influence you have on others will depend not only on what you say, but also what you b.
 2. A good safety program will decrease the number of a injuries, even if there is an increase in the number of minor incidents reported.
 3. At least e a year, evaluate your program and set new goals.
 4. Never f anyone from making suggestions or reporting injuries and unsafe conditions.
 5. Keep a c of hazards identified, actions taken and progress made.
 6. Make your workplace safer by limiting the number of employees allowed to perform d tasks.

Lesson 3, Page 19

Select the correct answer for the following sentences from the list below.

- a. demonstrate
- b. harassment
- c. trust
- d. shortcuts
- e. youth

1. Everyone learns by observing; if long-term employees take dangerous d, so will young workers.
2. The Department of Labor has established restrictions on the type of work that may be performed by e under 18 years of age.
3. When training employees, always a the task.
4. Never tolerate b in the workplace.
5. The best way to establish c with workers is to develop strong personal relationships and treat everyone fairly.

Lesson 4, Page 33

Circle the correct answer.

1. Some of the most common OSHA citations in the fruit and vegetable preserving and specialty manufacturing are:
 - a. personal protective equipment
 - b. hazard communication
 - c. mechanical power-transmission apparatus
 - d. all of the above

Select the correct answer for the following sentences from the list below.

- a. removal
 - b. chemical containers
 - c. three
 - d. guard
2. An evaluation of each powered industrial truck operator's performance must be conducted at least once every c years.
 3. The hazard communication standard requires employers to make sure b are labeled.
 4. Guards should be designed to allow oiling and maintenance without a of guards.
 5. In general, you must d any power-transmission belt that is seven feet or less above the floor or working platform.

Conclusion, Page 35

Circle the correct answer.

1. Financial costs of workplace injuries include:
 - a. medical bills
 - b. lawsuits
 - c. insurance premium increases
 - d. all of the above

2. Some of the most common OSHA citations in the fruit and vegetable preservation and specialty manufacturing industry include:
 - a. respiratory protection
 - b. the control of hazardous energy, lockout/tagout
 - c. powered industrial trucks
 - d. all of the above

Select the correct answer for the following sentences from the list below.

- a. evaluate
 - b. lockout/tagout
 - c. voluntary
 - d. once
3. VPP is a c partnership with OSHA that can increase productivity, improve the work environment, reduce injuries and save lives.

 4. At least d a year, evaluate your program and set new goals.

 5. The b standard contains many requirements to protect workers when they repair, service or perform maintenance on equipment with moving parts or hazardous power sources.

 6. The employer must a the workplace to determine if any spaces are permit-required confined places.



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