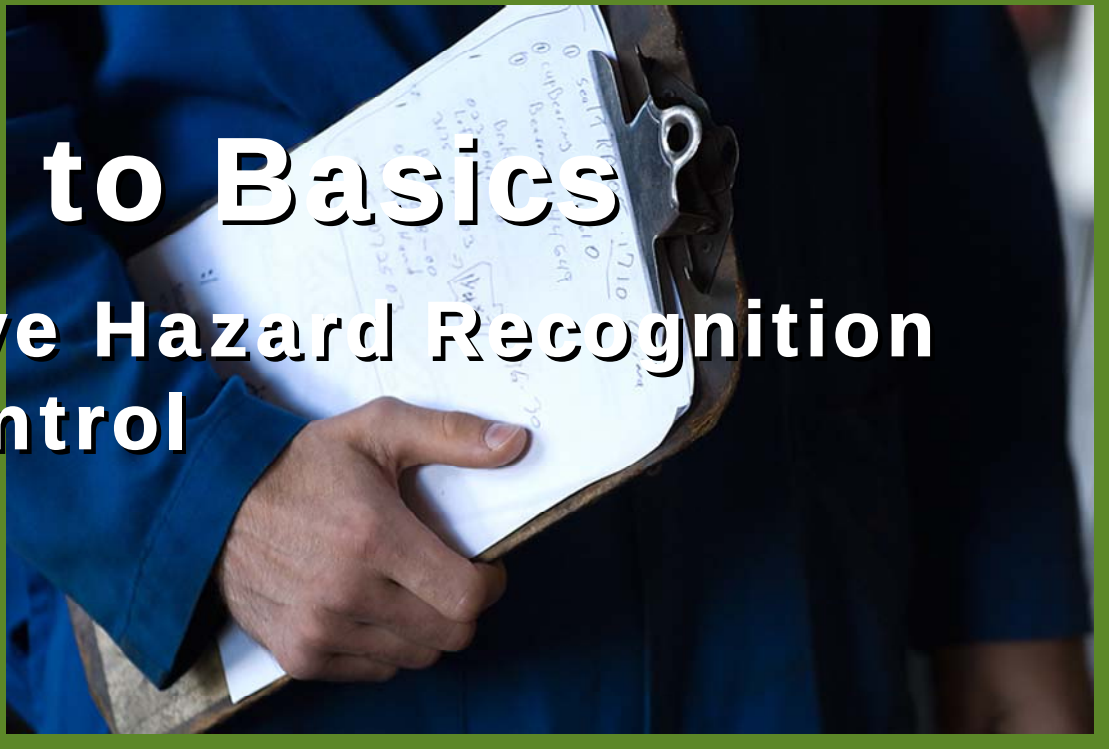
Back to Basics

Effective Hazard Recognition and Control



Tim McDonald
Sr Safety Management Consultant

saif corporation

Agenda

- Safety Committee Requirements
- Inspection Processes
- Hazard Identification
- The Control of Hazards
- Documentation & Follow Up

(And maybe a little fun)

Hazard Definition

"Any existing or potential condition in the workplace which, by itself or by interacting with other variables, can result in deaths, injuries, property damage or other losses."

- National Safety Council

Domino Theory (Modified)

5-Injury

4-Accident

3-Unsafe Act or Unsafe Condition

2-Worker Attributes, Abilities & Attitudes

1-Work Environment & Culture

The safety committee shall:

- (i) Establish procedures for workplace inspections by the safety committee inspection team to locate and identify safety and health hazards;
- (ii) Conduct workplace inspections at least quarterly; and
- (iii) Recommend to the employer how to eliminate hazards and unsafe work practices in the workplace;

OAR 437-001-0765 (d) (A)

Safety Committee Inspection Team

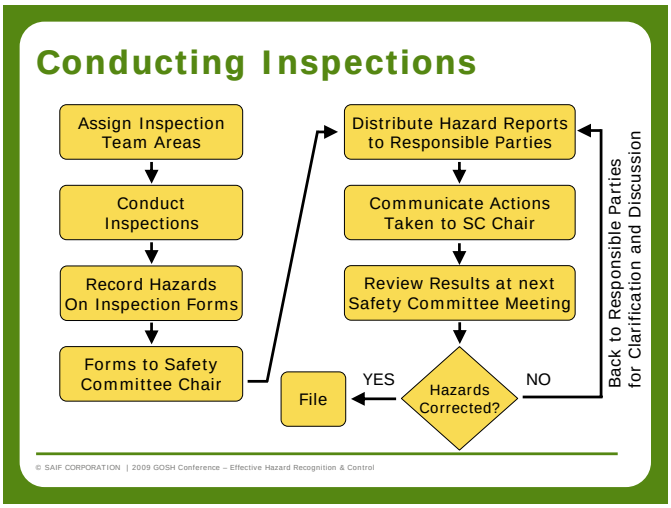
- All safety committee members
- Some safety committee members
- Designated individuals in each department
- Specifically designated team

The safety committee inspection team is usually comprised of safety committee members but can actually be any individuals within the company. Inspection team members must have an interest in safety and be knowledgeable about the hazards in your workplace.

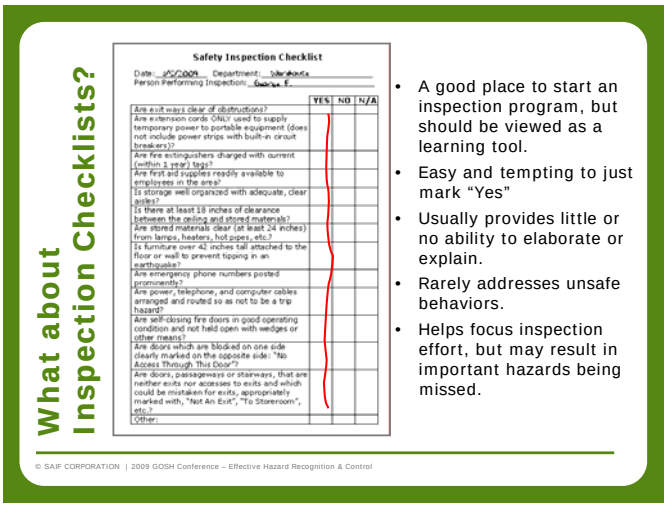
Quarterly Inspections

- All inspection team members
- All areas
- Every quarter

Safety committee inspections must be done at least quarterly and cover all areas of the property.

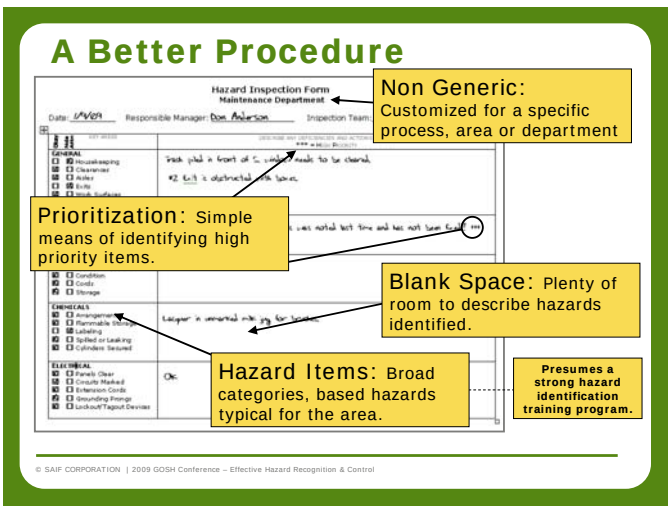


A good model for conducting inspections is illustrated here. It provides for accountability and follow up, to make sure identified hazards are addressed in a timely manner.



Inspection checklists are often generic forms downloaded from the internet. For an inspection process to be effective, it must focus on the hazards typical in your workplace. Further, it should concentrate on those things most likely to cause accidents.

Because everybody is busy, a checklist makes it very tempting to simply check off the "Yes" or "OK" columns.



This procedure begins with effective hazard identification training for the inspection team. It is customized for a specific process, area or department and has relatively broad categories of hazards, based upon the hazards typical in that area. This example form also provides ample space to note the details of hazards identified and uses a simple means of prioritizing items.

The second page has a place for specific area items, which have historically been the source of injuries.

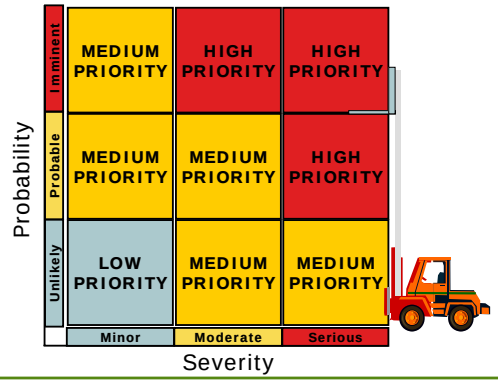
The form can be sent to responsible parties for action.

Making Hazard Recommendations to Management

If you want your recommendations to be given due consideration, they must be legitimate and prioritized.

Try to avoid the tendency to create a long laundry list of trivial items that are of no real safety consequence. Keeping the inspection focused on the things that can truly lead to accidents will give the effort more credibility with management.

Probability vs. Severity



In general, “Low Priority” hazards are just that. It is fine to keep a running list for reference, but these should not be submitted to management for correction. High priority items, especially those considered “Imminent Dangers” should be addressed immediately, even if it means shutting down a process until it is corrected.

Probability vs. Severity

IMMINENT DANGER

“A Condition, Practice or Act which exists in any place of employment and could reasonably be expected to cause death or serious physical harm immediately or before the imminence of such danger can be eliminated through the enforcement procedures otherwise provided by the act.”

OR-OSHA Definition

HIGH PROBABILITY AND HIGH SEVERITY POTENTIAL

Recommendations to Control Hazards

More Effective

Less Effective

Engineer the Hazard Out – Change the process or material so a hazard no longer exists or is significantly reduced.

Guard the Hazard - Isolates the hazard so that employees cannot reach it.

Wear Protective Equipment – Isolate the employees so the hazard cannot reach them.

Train to Avoid the Hazard – Educate employees on how to safely perform the task.

Follow-Up


XYZ CORPORATION
Safety Committee Report

- Submit identified hazards and recommendations to responsible management
- Establish a means for responsible personnel to provide the status of the items noted
- Safety Committee retains a running list of outstanding recommendations and follows up on them at subsequent meetings

The safety committee chair, or other designate, should create a list of hazards and needed corrective measures to submit to appropriate management representatives.

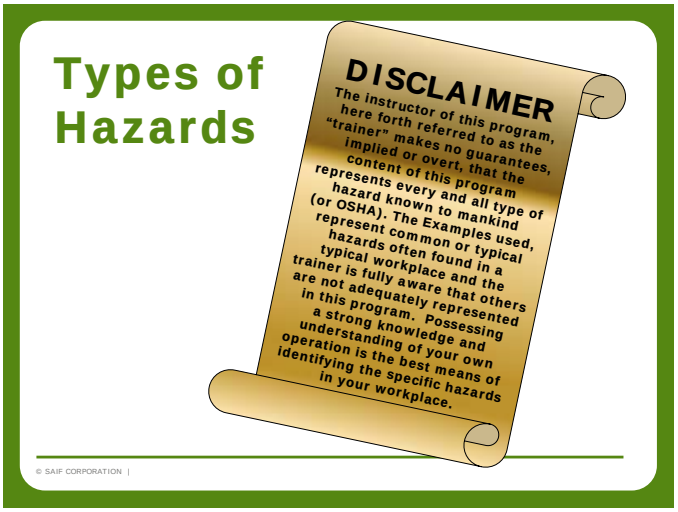
Identifying Hazards

"What could happen if… ?"

- Personal knowledge of the processes and hazards
- Industry Standards (ISO, Industry Associations)
- Regulatory requirements (OSHA, EPA etc.)
- Company accident history

Identifying hazards begins with a mind set to ask "What could happen if….." or "How could someone get hurt?" These are open-ended questions. Don't be limited by safety standards or check lists.

Keep this in mind because it is possible to have a hazard, but if it is out of reach, it does not need to be protected. For example, moving parts, blades and power transmission devices do not need to be guarded if they are at least 7 feet above the floor.



Before I begin discussing the types of hazards, let me first show the disclaimer. Essentially, we will be covering many examples of common hazards in the workplace. You will no doubt notice omissions. For the purposes of this program, I am attempting to give examples of the things you are most likely to come in contact with while conducting inspections.

These seven categories are in no way intended to cover all categories of hazards, but give us a framework to discuss the kinds of things to look for.

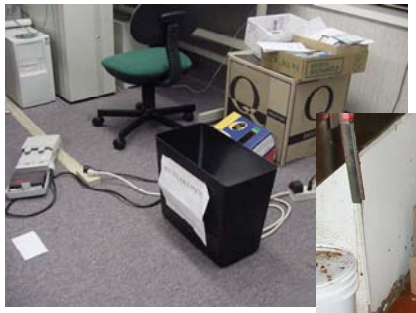
Key Concerns for Work Surfaces & Walkways

- Obstructions
- Clutter
- Slipperiness
- Damage
- Falls from Elevations

Work Surfaces & Walkways

Work Surfaces & Walkways

Obstructions & Clutter



Work Surfaces & Walkways

General Housekeeping

Work Surfaces & Walkways

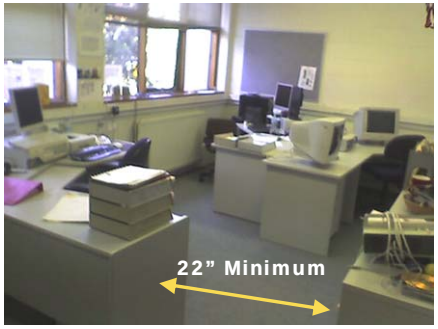
Blocked Exit

Work Surfaces & Walkways

Slippery Floors

Work Surfaces & Walkways

Narrow Aisles



Work Surfaces & Walkways

Damaged Surfaces

Work Surfaces & Walkways

Elevations

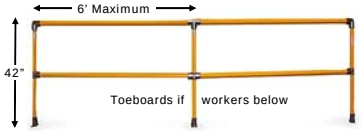
Using non-ladders to get to elevated areas

Never use the top or second to top rung of a ladder.

Work Surfaces & Walkways

Elevations

Standard railings are required for any open-sided floor or platform 4 or more feet above the adjacent floor surface; or any open-sided floor or platform when it is above an adjacent hazard



Work Surfaces & Walkways

Ladders and Stairs

Work Surfaces & Walkways

Ladders and Stairs

Key Concerns for Machinery Hazards

- Guarding for any part of a machine that produces hazards from:
  - Point of operation
  - In-running nip points
  - Rotating motion
  - Flying chips & sparks
- Lockout/tagout

Machinery

Basic Principle of Guarding

Can your reach the point of operation?
(or rotating part or nip point)

Point of Operation (POA) Guard Opening Requirements

DISTANCE OF OPENING FROM P.O.A.	MAXIMUM WIDTH OF OPENING
1/2" to 1-1/2"	1/4"
1-1/2" to 2-1/2"	3/8"
2-1/2" to 3-1/2"	1/2"
3-1/2" to 5-1/2"	5/8"
5-1/2" to 6-1/2"	3/4"
6-1/2" to 7-1/2"	7/8"
7-1/2" to 12-1/2"	1-1/4"
12-1/2" to 15-1/2"	1-1/2"
15-1/2" to 17-1/2"	1-7/8"
17-1/2" to 31-1/2"	2-1/8"
Over 31-1/2"	6"

Machinery Hazards — Methods of Machine Safeguarding

- Guards
  - Fixed
  - Interlocked
  - Adjustable
  - Self-Adjusting
- Devices
  - Presence Sensing
  - Pullback
  - Restraint
  - Safety Controls (tripwire cable, two-hand control, etc)
  - Gates
- Location/Distance
- Feeding & Ejection Methods
  - Automatic and/or Semi-Automatic Feed & Ejection
  - Robots
- Miscellaneous Aids
  - Awareness Barriers
  - Protective Shields
  - Hand-Feeding Tools

Machinery Hazards — Point of Operation

"Point of operation" means that point at which cutting, shaping, or forming is accomplished.

Table Saw w/ Self-Adjusting Guard

Guillotine Shear w/ Fixed Guard

Common Cutting Machines

Machinery Hazards — Point of Operation

"Point of operation" means that point at which cutting, shaping, or forming is accomplished.

Bench Grinder w/ Adjustable Tool Rests & Tongue Guards

CNC Machine w/ Interlocked Gate

Common Shaping Machines

Machinery Hazards — Point of Operation

"Point of operation" means that point at which cutting, shaping, or forming is accomplished.

Punch Press w/ Fixed Guard

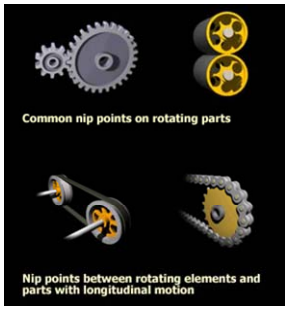
Press Brake w/ Presence-Sensing Device

Common Forming Machines

Machinery Hazards — In-Running Nip Points

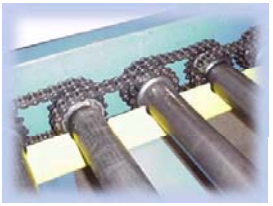
"In-running nip point" hazards occur when rotating parts on machinery come close together or are intermeshed.

If you can reach it, you need to guard it.



Machinery Hazards — Rotating Motion

Rotating motion takes the form of shafts, shaft ends, collars, couplings, flywheels and spindles, whether fast or slow.



If you can reach it, you need to guard it.

Machinery Hazards

When Guarding is Not Feasible

Presence-Sensing Device

Two-Hand Control

Pull Back Device

Machinery Hazards

Lockout/Tagout

If someone is performing maintenance or repairs,

and a form of energy is present or stored,

it must be isolated or dissipated.

Machinery Hazards

Lockout/Tagout

Energy Sources

- Electricity
- Hydraulic Pressure
- Pneumatic Pressure
- Spring Pressure
- Hot Water & Steam
- Chemicals in Lines
- Gravity (elevated objects)

Key Concerns for Electrical Hazards

- Clear Access to Electric Panels
- Labeling of Electric Circuits
- Condition/Use of Extension Cords
- Grounding of Cords & Devices

Electrical

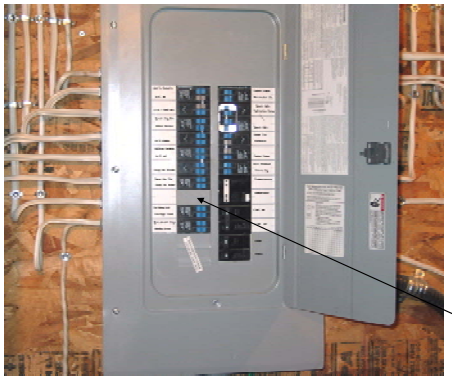
Electrical Hazards

Electric Panel Access

Electrical panels need to have direct access and at least 30” clear space in front of them

Electrical Hazards

Electric Panel Labeling



Each Circuit Clearly Labeled

Any open slots covered with “blanks”

Electrical Hazards

Extension Cords

Cords should be free of damage and splices

Never used for permanent power source

Electrical Hazards

Extension Cords

Grounding prong missing

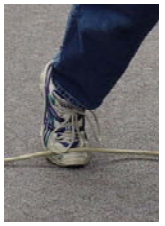
Cord worked loose from plug

Not fully plugged into receptacle

Electrical Hazards

Extension Cords

Power strip overcurrent



Trip hazard

Cord cover

Electrical Hazards

Testing Cords and Circuits

GFCI Trip

Key Concerns for Chemical Hazards

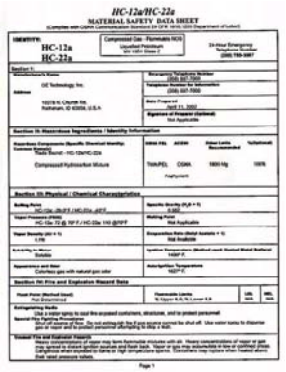
- Hazard Communication
  - MSDS
  - Container Labeling
  - PPE Requirements
- Proper Chemical Storage

Chemical

Chemical Hazards

Material Safety Data Sheets (MSDS)

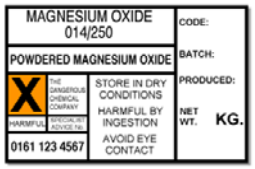
MSDS's need to be available for all hazardous substances in the workplace

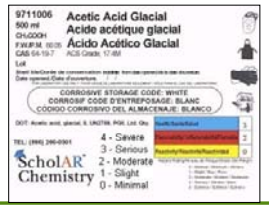

HC-12a/HC-22a
MATERIAL SAFETY DATA SHEET

Chemical Hazards

Container Labeling

- Product Identification
- Hazard Warning – communicates specific health and physical hazards

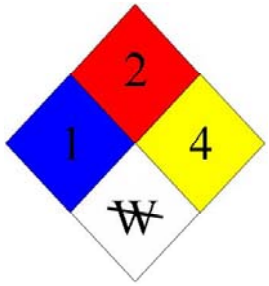




Chemical Hazards

Container Labeling

HEALTH HAZARD
4 – Deadly
3 – Extreme Danger
2 – Hazardous
1 – Slightly Hazardous
0 – Normal Material



NFPA Diamond

FIRE
Flash Point
4 – Below 73 deg F
3 – Below 100 deg F
2 – 100 to 200 deg F
1 – Above 200 deg F
0 – Will Not Burn

SPECIFIC HAZARD
OXY – Oxidizer
ACID – Acid
ALK – Alkalai
COR – Corrosive
W – Use No Water
☢ - Radiation Hazard

REACTIVITY
4 – May Detonate
3 – Shock & Heat May Detonate
2 – Violent Chemical Change
1 – Unstable if Heated
0 – Stable

Chemical Hazards

Container Labeling

Secondary Containers also Need to be Labeled

Chemical Hazards

Storage of Chemicals

- Neat & Organized
- Incompatibles Separated
- No Leakage

Chemical Hazards

Storage of Chemicals

- Neat & Organized
- Incompatibles Separated
- No Leakage

Chemical Hazards

Storage of Chemicals

Speaking of Drums...

When dispensing flammables from drums, the drum should be grounded and bonded to the container to prevent static buildup.

Chemical Hazards

Storage of Chemicals

Speaking of Flammables…

- Maximum storage outside of an approved cabinet is 25 gallons
- Approved cabinets may contain up to 60 gallons of flammables (fp < 100 deg F) or 120 gallons of combustibles (fp >100 deg F)
- A maximum of 3 approved cabinets may be in an area

Chemical Hazards

Storage of Chemicals

Gas Cylinders …

Even Better

Chemical Hazards

Storage of Chemicals

Gas Cylinders …

Flammable Gas

15 Ft Minimum

or Non-Combustible Barrier

Oxygen

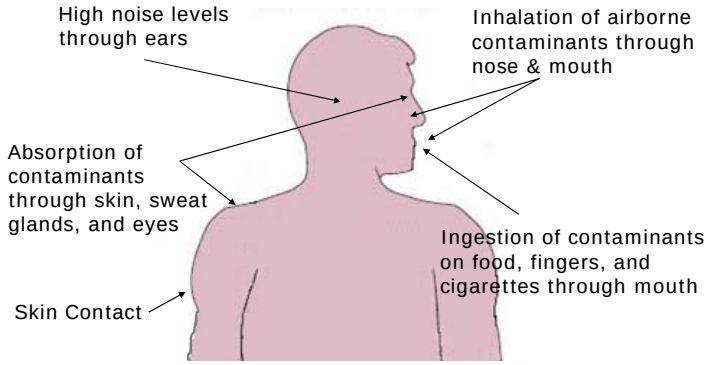
Key Concerns for Environmental Hazards

- Routes of Exposure
- Types of Contaminants
- Noise & Other Contaminants
- Environmental Controls

Environmental

Environmental Hazards

Routes of Exposure



Environmental Hazards

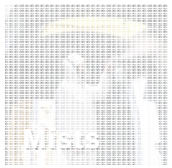
Airborne Contaminants

Environmental Hazards

Airborne Contaminants

Vapors form above a liquid as a result of eVAPORation.

- Open containers (e.g. gasoline).
- Spilled liquids
- Heated liquids
- Wiping down surfaces with a chemical



Environmental Hazards

Airborne Contaminants

Fumes are produced when metals are heated.

- Welding & Cutting
- Soldering
- Heat treating

Environmental Hazards

Airborne Contaminants

Gasses are typically stored in pressurized cylinders.

- Welding Gasses (Acetylene & O2)
- Liquid Nitrogen
- Carbon Dioxide
- Chlorine Gas

Environmental Hazards

Airborne Contaminants

Mists are produced when a liquid, under pressure, is atomized.

- Spray painting
- Pesticide application
- Other spraying processes
- Ruptured hydraulic lines

Environmental Hazards

Airborne Contaminants

Smoke is produced when “ordinary” combustibles are burned.

- Incinerator
- Burn pile
- Structural fire
- Cigarettes & cigars

Environmental Hazards

Airborne Contaminants

Dust is created whenever dried particulates are disturbed. Most dust is an irritant, rather than a health hazard.

- Sweeping
- Blowdown operations
- Construction
- Manufacturing processes

Environmental Hazards

Ingested Contaminants

Environmental Hazards

Absorption of Contaminants

Environmental Hazards

Skin Contact of Contaminants

Environmental Hazards

Noise Exposure

Any task with noise levels at or above 85 decibels should be done with hearing protection.

Environmental Hazards

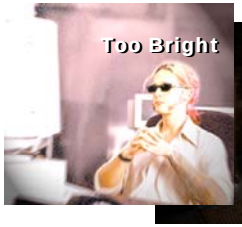
Noise Exposure

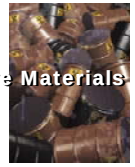
Examples	Sound Pressure Level L_p dBSPL
Jet aircraft, 50 m away	140
Threshold of pain	130
Threshold of discomfort	120
Chainsaw, 1 m distance	110
Disco, 1 m from speaker	100
Diesel truck, 10 m away	90
Kerbside of busy road, 5 m	80
Vacuum cleaner, distance 1 m	70
Conversational speech, 1 m	60
Average home	50
Quiet library	40
Quiet bedroom at night	30
Background in TV studio	20
Rustling leaf	10
Threshold of hearing	0

If the average noise level for an 8 hour shift is at or above 85 decibels, a full hearing conservation program is required.

Environmental Hazards

Other Environmental Hazards





Environmental Hazards

Environmental Controls

Substitution (To utilize a less hazardous substance)

Environmental Hazards

Environmental Controls

Ventilation (To dilute or eliminate the hazard)

Local Exhaust Ventilation

General Ventilation

Environmental Hazards

Environmental Controls

Personal Protective Equipment

Key Concerns for Ergonomic Hazards

- Musculoskeletal Disorders (MSD's)
- Force
- Frequency
- Posture

Ergonomic

Ergonomic Hazards

Trauma

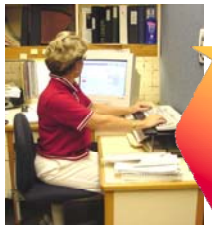
Healing Valve

Ergonomic Hazards

Common Musculoskeletal Disorders

Injury	Symptoms	Typical Causes
Bursitis: inflammation of the bursa (sack-like cavity) between skin and bone, or bone and tendon. Can occur at the knee, elbow, or shoulder.	Pain and swelling at the site of the injury.	Kneeling, pressure at the elbow, repetitive shoulder movements.
Carpal tunnel syndrome: pressure on the nerves that pass up the wrist.	Tingling, pain and numbness in the thumb and fingers, especially at night.	Repetitive work with a bent wrist. Use of vibrating tools. Sometimes follows tenosynovitis (see below).
Ganglion: a cyst at a joint or in a tendon-sheath. Usually on the back of the hand or wrist.	Hard, small, round swelling, usually painless.	Repetitive hand movements.
Tendonitis: inflammation of the area where muscle and tendon are joined.	Pain, swelling, tenderness and redness of hand, wrists, and/or forearm. Difficulty in using the hand.	Repetitive movements.
Tenosynovitis: inflammation of tendons and/or tendon sheaths.	Aching, tenderness, swelling, extreme pain, difficulty in using the hand.	Repetitive movements, often non-strenuous. Can be brought on by sudden increases in workload or by introduction of new processes.
Tension neck or shoulder: inflammation of the neck and shoulder muscles and tendons.	Localized pain in the neck and shoulders.	Having to maintain a rigid posture.
Trigger finger: inflammation of tendons and/or tendon sheaths of the fingers.	Inability to move fingers smoothly, with or without pain. Repetitive ovements.	Having to grip too long, too tightly, or too frequently.

Ergonomic Hazards



Ergonomic Hazards

Forces should Ideally be kept to 35 lbs or less

Reduce the load by:
- Purchase in smaller sizes
- Team lifting
- Increase load then use lifting equipment

Ergonomic Hazards

Any joint or muscle, if flexed enough times without rest, will experience fatigue, and possibly injury – regardless of force applied.

Reduce frequency by:
- Cross training & job rotation
- Task automation
- Work cells where employees perform multiple tasks

Ergonomic Hazards

Work should be done in "Neutral" postures to reduce the possibility of MSD's

- Neutral postures
- Leverage Zones
- Avoid Risk Factors

Ergonomic Hazards

Leverage Zones

Red *Danger Zone*
- Elbows stretch out, arms reach out in front of you
- Pivot point changes to the low back
- Back muscles are used to complete the task
- Force on the low back can be 50:1 in the red zone

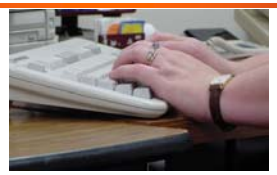
Yellow *At Risk Zone*
- Elbows about 6 inches out from your side.
- Pivot point is at the shoulder
- Force on the shoulder and upper back up to 6 times as in the green zone
- Shoulder muscles rely on back muscles for help

Green *Safety Zone*
- Elbows in close to the body
- Pivot point is the elbow
- Weight is closer to the body
- Provides better leverage
- Requires less force to lift with your hands
- Less Work for the back and muscles

Ergonomic Hazards

Risk Factors


Bent Back


Bent Wrists


Elbows Out

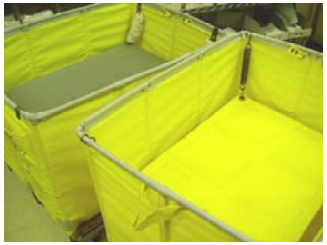

Over Reaching


Upper Body Twisting


Working Outside Comfort Zone

Ergonomic Hazards

Common Solutions


Spring-Loaded Bottoms


Load-Leveling Devices

Ergonomic Hazards

Common Solutions


Angle the Work

Ergonomic Hazards

Common Solutions

High Reach

Above Shoulder Height

Knee to Chest Height

Below Knee Height

Ergonomic Hazards

Common Solutions

Flip up keyboard legs and adjust keyboard or chair height to keep wrists straight.

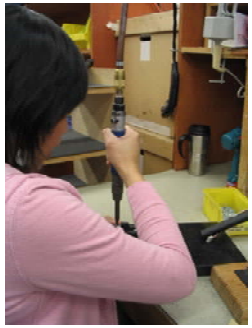
Ergonomic Hazards

Common Solutions

Angle the Tool

Ergonomic Hazards

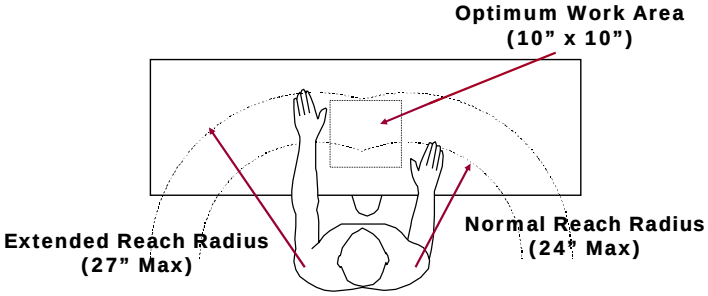
Common Solutions



Straighten the Tool

Ergonomic Hazards

Common Solutions



Arrange workstations so the majority of work is performed in the “Optimum Work Area”. Frequent side tasks should be within the “Normal Reach Radius” and infrequent side tasks within the “Extended Reach Radius”.

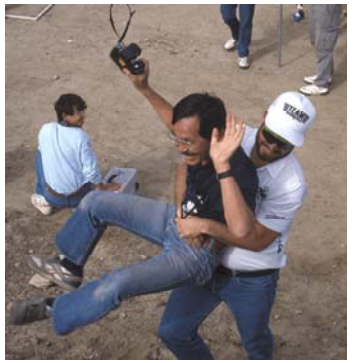
Key Concerns for Unsafe Behaviors

- Treat unsafe behaviors the same as unsafe conditions
- Record area and actions, but not names
  - Horseplay
  - Improper tool use
  - Unsafe lifting
  - Bypassing safety devices
  - Not using PPE

Behavioral

Unsafe Behaviors

Horseplay



Unsafe Behaviors

Improper Tool Use

Improper or No Ladder Use

Unsafe Behaviors

Improper Tool Use

Improper or No Ladder Use

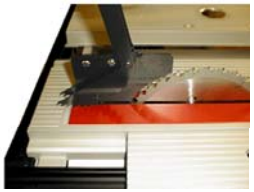
Unsafe Behaviors

Unsafe Lifting

Unsafe Behaviors

Bypassing Safety Devices

Guard not replaced after maintenance



Guard moved out of way for work

Unsafe Behaviors

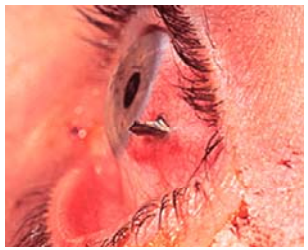
Bypassing Safety Devices

Electrical interlock taped back

Electric panel door not replace after maintenance

Unsafe Behaviors

Not Using Personal Protective Equipment



Not wearing safety glasses when chips, particles or sparks are flying

Unsafe Behaviors

Not Using Personal Protective Equipment

Not wearing hearing protection when noise levels are elevated.

Unsafe Behaviors

Not Using Personal Protective Equipment

Not wearing gloves when handling chemicals.

Unsafe Behaviors

Not Using Personal Protective Equipment

Not wearing face protection when handling chemicals.

Unsafe Behaviors

Not Using Personal Protective Equipment

Not wearing protective footwear.

Unsafe Behaviors

Not Using Personal Protective Equipment

Not wearing seatbelt.

Hazard Inspection Form
Maintenance Department

Date:_____ Responsible Manager: _____ Inspection Team:_____

CHECK ITEMS NEEDING ATTENTION	DESCRIBE ANY DEFICIENCIES AND ACTIONS NEEDED HIGH PRIORITY = ***
GENERAL ☐ Housekeeping ☐ Clearances ☐ Aisles ☐ Exits ☐ Work Surfaces ☐ Stairs & Ladders	
MACHINERY ☐ Guarding ☐ Barriers/Gates ☐ Lockout/Tagout	
HAND TOOLS ☐ Appropriate for Job ☐ Condition ☐ Cords ☐ Storage	
CHEMICALS ☐ Arrangement ☐ Flammable Storage ☐ Labeling ☐ Spilled or Leaking ☐ Cylinders Secured	
ELECTRICAL ☐ Panels Clear ☐ Circuits Marked ☐ Extension Cords ☐ Grounding Prongs	

☐ Lockout/Tagout Devices	
Environment ☐ Airborne Contaminants ☐ Noise ☐ Temperatures ☐ Illumination	
ERGONOMICS ☐ Awkward Postures ☐ Repetitive Motion ☐ Forceful Exertions ☐ Contact Pressure ☐ Work Station Design	
AREA SPECIFIC ☐ Ramp Free of Grease ☐ Rack Storage Neat ☐ Forklifts Using Horns ☐ Extension Cord Condition ☐ Using Earplugs ☐ Using Eye Protection	
OTHER	

XYZ CORPORATION
Safety Committee Report

March 7, 2008

To: John Pullman
Re: Safety Inspection of 3/5/2008

During the safety committee inspection of your area on the above date, the following hazards and/or unsafe behaviors were observed. Please review and respond, noting actions or intended actions, by April 1, 2008.

Yours in safety

Alice Benton, Safety Manager

Item: 95-1 Improper lifting by sorting line workers.	
Actions:	**Date Completed**

Item: 95-2 Loose guard at end of Inspection Line #1.	
Actions:	**Date Completed**

Item: 95-3 Broken rung on ladder to Batch Tank #3 **CRITICAL ITEM**	
Actions:	**Date Completed**

Date _____ Signature _____

Inspection Checklist Items from OR-OSHA

Work environment: general

☐ Are all work areas clean and orderly?

☐ Are walking surfaces dry or slip-resistant?

☐ Are spilled materials or liquids cleaned up immediately?

☐ Is combustible scrap, debris, and waste safely contained and removed from the site promptly?

☐ Are covered metal waste cans used for oily and paint-soaked waste?

☐ Is the appropriate number of toilets and washing facilities provided?

☐ Are toilets and washing facilities sanitary?

☐ Are work areas adequately lighted?

Walkways

☐ Are aisles and passageways kept clear and at least 22 inches wide?

☐ Are aisles and walkways appropriately marked?

☐ Are wet surfaces covered with non-slip materials?

☐ Are openings or holes in the floors or other walking surfaces repaired or otherwise made safe?

☐ Is there a safe clearance for walking in aisles in which vehicles operate?

☐ Are materials and equipment stored so sharp objects do not obstruct the walkway?

☐ Are changes of direction or elevation easily identified?

☐ Do aisles or walkways near moving or operating machinery, welding, and similar operations keep employees away from hazards?

☐ Is there floor-to-headroom height of at least 6.5 feet provided for the entire length of any

walkway?

☐ Are standard guardrails provided wherever aisle or walkway surfaces are elevated more than four feet above floor or ground?

☐ Are bridges provided over conveyors and similar hazards?

Floor and wall openings

☐ Are floor holes or openings guarded by a cover, guardrail, or equivalent on all sides (except at entrance to stairways or ladders)?

☐ Are toeboards installed around the edges of a permanent floor opening (where persons may pass below the opening)?

☐ Are skylight screens constructed and mounted to withstand a load of at least 200 pounds?

☐ Is the glass in windows, doors, and glass walls which may be subject to human impact appropriate for its use?

☐ Are grates or similar covers over floor openings such as floor drains designed so that the grate spacing will not catch foot traffic or rolling equipment?

☐ Are unused service pits and portions of such pits covered or protected by guardrails or the equivalent?

Stairs and stairways

☐ Are standard stair rails and handrails present on all stairways having four or more risers?

☐ Are all stairways at least 22 inches wide?

☐ Do stairs have at least 6.5 feet of overhead clearance?

☐ Do stairs angle no more than 50 degrees and no less than 30 degrees?

☐ Are risers on stair steps uniform, with no riser more than 9.5 inches?

☐ Are steps on stairs and stairways provided with a slip-resistant surface?

☐ Are stairway handrails 30-42 inches above the leading edge of stair treads?

☐ Do stairway handrails have at least three inches' clearance between the handrail and the

surface they are mounted on?

☐ Are stairway handrails capable of withstanding a load of 200 pounds applied in any direction?

☐ Where stairs or stairways exit directly into an area where vehicles may be operated, have you provided adequate barriers and warnings to prevent employees from stepping into traffic?

Elevated surfaces

☐ Have you posted signs, when appropriate, that show load capacities of elevated floors?

☐ Are elevated surfaces (more than four feet above the floor or ground) provided with standard guardrails?

☐ Are all elevated surfaces beneath which people or machinery could be exposed to falling objects provided with standard toeboards?

☐ Is a permanent means of access/egress provided to elevated work surfaces?

☐ Is material on elevated surfaces piled, stacked, or racked to prevent it from tipping, falling, collapsing, rolling, or spreading?

☐ Are dock boards or bridge plates used when transferring materials between docks and trucks or railcars?

☐ Are dock boards or bridge plates secured in place when they are in use?

Exits

☐ Are all exits marked with an exit sign and illuminated by a reliable light source if used in darkness?

☐ Are directions to exits marked with visible signs if the exits are not immediately apparent?

☐ Are doors, passageways, or stairways that are neither exits nor access to exits, and that could be mistaken for exits, marked "NOT AN EXIT," or "TO BASEMENT," "STOREROOM," and the like?

☐ Are exit signs provided with the word "EXIT" in lettering at least six inches high and the stroke of the lettering at least ¾-inch wide?

☐ Are exit doors side-hinged?

☐ Are all exits kept free of obstructions and unlocked?

☐ Are at least two means of egress provided from elevated platforms, pits, or rooms where the absence of a second exit would increase the risk of injury from hot, poisonous, corrosive, suffocating, flammable, or explosive substances?

☐ Are there sufficient exits to permit prompt escape in emergencies?

☐ Are the number of exits from each floor of a building and the number of exits from the building itself appropriate for the building occupancy load?

☐ When workers must exit through glass doors, storm doors, and such are the doors fully tempered and do they meet safety requirements for human impact?

Employer posting

☐ Is the OR-OSHA *Job Safety and Health* poster displayed where all employees are likely to see it?

Are these other notices properly displayed:

- ☐ Field Sanitation Notice for farm workers?
- ☐ Safety Committee meeting minutes?
- ☐ OSHA 300 Summary in February?
- ☐ Notice of compensation guarantee contract?

☐ Are emergency telephone numbers posted where they can be readily used in an emergency?

☐ Where employees may be exposed to toxic substances or harmful physical agents, has appropriate information concerning employee access to medical and exposure records and material safety data sheets (MSDSs) been made readily available?

☐ Are signs for exits, room capacity, floor loading, and exposure to X-ray, microwave, or other harmful radiation or substances posted as required?

Recordkeeping

☐ Are all occupational injuries and illnesses, including those involving loss of life, loss of consciousness, loss of time from work, and those requiring treatment other than first aid, recorded as required on the OSHA Form 300?

☐ Are copies of OSHA Form 300 and First Report of Injury, Form 801, kept for five years?

☐ Are employee's medical records and records of exposure to hazardous substances or harmful physical agents current?

☐ Have arrangements been made to maintain required records for the legal period for each type of record? (Some records must be maintained for at least 40 years.)

☐ Are operating permits and records current for elevators, pressure vessels, and liquefied petroleum gas tanks?

☐ Are employee safety and health training records maintained?

☐ Are safety inspections and corrections documented and maintained?

Machine guarding

☐ Is there an employee training program for safe methods of machine operation?

☐ Is there adequate supervision to ensure that employees follow safe machine operating procedures?

☐ Is there a regular program of safety inspection for machinery and equipment?

☐ Is all machinery and equipment clean and properly maintained?

☐ Is sufficient clearance provided around and between machines to allow for safe operation, setup, servicing, material handling, and waste removal?

☐ Is equipment and machinery securely placed and anchored when necessary to prevent tipping or other movement that could result in personal injury?

☐ Is there a power shutoff switch within reach of the operator's position at each machine?

☐ Are the noncurrent-carrying metal parts of electrically-operated machines bonded and grounded?

☐ Are foot-operated switches guarded or arranged to prevent accidental actuation by personnel or falling objects?

☐ Are manually operated valves and switches that control the operation of equipment and machines clearly identified and readily accessible?

☐ Are all emergency stop buttons colored red?

- ☐ Are all pulleys and belts (within seven feet of the floor or working level) properly guarded?
- ☐ Are all moving chains and gears properly guarded?
- ☐ Are methods provided to protect the operator and other employees in the machine area from hazards created at the point of operation, ingoing nip points, rotating parts, flying chips, and sparks?
- ☐ Are machinery guards secured and arranged so they do not present a hazard in their use?
- ☐ If special hand tools are used for placing and removing material, do they protect the operator's hands?
- ☐ Are revolving drums, barrels, and containers that are required to be guarded by an enclosure that is interlocked with the drive mechanism so that revolution cannot occur, so guarded?
- ☐ Do arbors and mandrels have firm and secure bearings, and are they free from play?
- ☐ Are provisions made to prevent machines from automatically starting when power is restored following a power failure or shut-down?
- ☐ Are machines constructed to be free from excessive vibration when the largest size tool is mounted and run at full speed?
- ☐ If machinery is cleaned with compressed air, is air pressure controlled and personal protective equipment or other safeguards used to protect operators and other workers from eye and body injury?
- ☐ Are fan blades protected with a guard having openings no larger than ½ inch when operating within seven feet of the floor?
- ☐ Do saws used for ripping have anti-kickback devices and spreaders?
- ☐ Are radial arm saws guarded and so arranged that the cutting head will gently return to the back of the table when released?

Lockout and tagout

- ☐ Is all machinery or equipment capable of movement de-energized or disengaged and locked out during cleaning, servicing, adjusting, or setup?
- ☐ Do you prohibit locking out control circuits instead of locking out main power disconnects?
- ☐ Are all control valve handles provided with a means of lockout?

☐ Does the lockout/tagout procedure require that stored (potential) energy be released or blocked before equipment is locked-out for repairs?

☐ Are appropriate employees provided with individually keyed personal safety locks?

☐ Are employees required to maintain control of their keys while they have safety locks in use?

☐ Do you require employees to check the safety of the lockout by attempting to start up after making sure no one is exposed?

When the power-disconnecting means does not also disconnect the electrical control circuit:

☐ Are appropriate electrical enclosures identified?

☐ Are means provided to ensure the control circuit can also be disconnected and locked out?

Hand tools and equipment

☐ Are all company- and employee-owned tools and equipment in good working condition?

☐ Are hand tools such as chisels or punches that develop mushroomed heads reconditioned or replaced as necessary?

☐ Are broken or fractured handles on hammers, axes, or similar equipment replaced promptly?

☐ Are appropriate handles used on files and similar tools?

☐ Do employees use appropriate safety glasses, face shields, and similar equipment when using hand tools or equipment that might produce flying materials or be subject to breakage?

☐ Are jacks checked periodically to ensure they are in good operating condition?

☐ Are tool handles wedged tightly in the heads of all tools?

☐ Are tool-cutting edges kept sharp tools will smoothly without binding or skipping?

☐ Do employees use eye and face protection when they drive hardened or tempered tools, bits, or nails?

Tools and equipment: portable power-operated

☐ Do grinders, saws, and similar equipment have appropriate safety guards?

☐ Are power tools used with the shield or guard that the manufacturer recommends?

☐ Are portable circular saws equipped with guards above and below the base shoe?

☐ Are circular saw guards checked to ensure guarding of the lower blade portion?

☐ Are rotating or moving parts of equipment guarded to prevent physical contact?

☐ Are all cord-connected, electrically-operated tools and equipment either grounded or of the approved double-insulated type?

☐ Are effective guards in place over belts, pulleys, chains, and sprockets on equipment such as concrete mixers, air compressors, and the like?

☐ Are portable fans provided with full guards having openings of ½ inch or less?

☐ Is hoisting equipment available and used for lifting heavy objects, and are hoist ratings and characteristics appropriate for the task?

☐ Are ground-fault circuit interrupters (on all temporary electrical 15-, 20-, and 30-ampere circuits) used during periods of construction?

Or ☐ Is there an assured equipment-grounding conductor program in place during periods of construction?

☐ Are pneumatic and hydraulic hoses on power-operated tools checked regularly for deterioration or damage?

Ladders: portable

☐ Are all ladders in good condition, joints between steps and side rails tight, all hardware and fittings securely attached, and moveable parts operating freely without binding or undue play?

☐ Are there non-slip safety feet on all ladders except step ladders?

☐ Are ladder rungs and steps free of grease and oil?

☐ Are employees prohibited from placing a ladder in front of doors opening toward the ladder except when the door is blocked open, locked, or guarded?

- ☐ Are employees prohibited from placing ladders on boxes, barrels, or other unstable bases?
- ☐ Are employees instructed to face the ladder when ascending and descending?
- ☐ Are employees prohibited from using ladders that are broken, missing steps, rungs, cleats, broken side rails, or other faulty parts?
- ☐ Are employees instructed not to use the top step of ordinary stepladders as a step?
- ☐ When portable rung ladders are used to gain access to elevated platforms, roofs, and the like, does the ladder always extend at least three feet above the elevated surface?
- ☐ Do you require the users of portable rung or cleat-type ladders to place the base so that slipping will not occur or to lash or otherwise hold the ladder in place?
- ☐ Do portable metal ladders have legible signs reading “CAUTION — Do Not Use Around Electrical Equipment” or equivalent wording?
- ☐ Are the rungs of ladders uniformly spaced at 12 inches, center to center?

Materials handling

- ☐ Are materials stored so that they prevent sprains or strains when employees retrieve them?
- ☐ Is there a safe clearance for moving equipment through aisles and doorways?
- ☐ Are aisles permanently marked and kept clear to allow safe passage?
- ☐ Are motorized vehicles and mechanized equipment inspected daily or before use?
- ☐ Are vehicles shut off and brakes set before loading and unloading?
- ☐ Are containers of combustibles or flammables properly stacked and stabilized when they are being moved?
- ☐ Are trucks and trailers secured from movement during loading and unloading?
- ☐ Are dock boards (dock plates) used during loading and unloading operations?
- ☐ Are dock plates and loading ramps adequately constructed and maintained to support imposed loads?
- ☐ Are hand trucks maintained in safe operating condition?

- ☐ Are chutes equipped with side boards of sufficient height to prevent materials from falling off?
- ☐ Are chutes and gravity-roller sections firmly placed or secured to prevent displacement?
- ☐ At the delivery end of rollers or chutes, are provisions made to brake the movement of materials?
- ☐ Are materials handled at a uniform level to prevent lifting or twisting injuries?
- ☐ Are material-handling aids used to lift or transfer heavy or awkward objects?
- ☐ Are pallets usually inspected before loading or moving them?
- ☐ Do you use hooks with safety latches or other devices when hoisting materials, so that slings or load attachments cannot accidentally slip off the hoist hooks?
- ☐ Are securing chains, ropes, chokers, or slings adequate for the job?
- ☐ When equipment or materials are being hoisted, do you ensure that no one will be passing under the suspended loads?

Industrial trucks

- ☐ Do industrial truck operators meet the requirements for industrial truck operator training adopted in May 1999?
- ☐ Is substantial overhead protective equipment provided on high-lift rider equipment?
- ☐ Are the required lift-truck operating rules posted and enforced, and is the capacity rating posted in plain view of the operator?
- ☐ Is directional lighting provided on each industrial truck that operates in an area with less than two foot-candles per square foot of general lighting?
- ☐ Does each industrial truck have a warning horn, whistle, gong, or other device that can be clearly heard above the normal noise in the operation area?
- ☐ Are the brakes on each industrial truck capable of bringing the vehicle to a complete and safe stop when fully loaded?
- ☐ Will the industrial truck’s parking brake effectively prevent the vehicle from moving when unattended?

☐ Are industrial trucks operating in areas of flammable gases or vapors, combustible dust, or ignitable fibers approved for such locations?

☐ Are motorized hand and hand/rider trucks so designed that the brakes are applied and power to the drive motor shuts off when the operator releases his/her grip on the device that controls the travel?

☐ Are industrial trucks with internal combustion engines that are operated in buildings or enclosed areas checked to ensure such operations do not cause harmful concentrations of dangerous gases or fumes?

Hazard communication

☐ Have you compiled a list of hazardous substances that are used in your workplace?

☐ Is there a written hazard communication program dealing with material safety data sheets (MSDSs), labeling, and employee training?

☐ Is someone responsible for MSDSs, container labeling, and employee training?

☐ Is each container for a hazardous substance (vats, bottles, storage tanks) labeled with product identity and a hazard warning that communicates specific health and physical hazards?

☐ Is there an MSDS readily available for each hazardous substance used?

☐ Do you inform other employers whose employees share a work area with your employees, where hazardous substances are used?

☐ Do you have an employee training program for hazardous substances?

Does this program include the following:

- ☐ An explanation of what an MSDS is, and how to obtain and use one? An explanation of “Right to Know?”
- ☐ The contents of the MSDS for each hazardous substance or class of substances?
- ☐ Informing employees where they can review the employer’s written hazard communication program, and where hazardous substances are located in work areas?
- ☐ The physical and health hazards of substances in the work area, how to detect their presence, and specific protective measures to be used?

- ☐ Hazard communication program details, including labeling system and MSDS use?

- ☐ How employees will be informed of hazards of non-routine tasks and hazards of unlabeled pipes?

Chemical exposures

- ☐ Is employee exposure to chemicals kept within acceptable levels?

- ☐ Are eyewash fountains and safety showers provided in areas where caustic corrosive chemicals are handled?

- ☐ Are all employees required to use personal protective clothing and equipment (gloves, eye protection, respirators) when handling chemicals?

- ☐ Are flammable or toxic chemicals kept in closed containers when not in use?

- ☐ Where corrosive liquids are frequently handled in open containers or drawn from storage vessels or pipelines, are adequate means provided to neutralize or dispose of spills or overflows (properly and safely)?

- ☐ Have standard operating procedures been established, and are they being followed when chemical spills are cleaned up?

- ☐ Are respirators stored in a convenient and clean location?

- ☐ Are emergency-use respirators adequate for the various conditions under which they may be used?

- ☐ Are employees prohibited from eating in areas where hazardous chemicals are present?

- ☐ Is personal protective equipment provided, used, and maintained whenever necessary?

- ☐ Are there written standard operating procedures for selecting and using respirators where needed?

- ☐ If you have a respirator protection program, are your employees instructed on the correct usage and limitations of the respirators?

- ☐ Are the respirators NIOSH-approved for particular applications?

- ☐ Are respirators inspected and cleaned, sanitized, and maintained regularly?

- ☐ Are you familiar with the Threshold Limit Value (TLV) or Permissible Exposure Limit

(PEL) of airborne contaminants and physical agents used in your workplace?

☐ Have you considered having an industrial hygienist or environmental health specialist evaluate your work operations?

☐ If internal combustion engines are used, is carbon monoxide kept within acceptable levels?

☐ Is vacuuming used rather than blowing or sweeping dusts whenever possible for cleanups?

Spray finishing operations

☐ Do you ensure adequate ventilation before starting spray finishing operations?

☐ Do you use mechanical ventilation when spraying in enclosed areas?

☐ When you use mechanical ventilation during spraying operations, do you ensure that it will not recirculate contaminated air?

☐ Is the spray area free of hot surfaces?

☐ Is the spray area at least 20 feet from flames, sparks, operating electrical motors, and other ignition sources?

☐ Are the portable lamps used to illuminate spray areas suitable for use in a hazardous location?

☐ Is approved respiratory equipment provided and used during spraying operations?

☐ Do solvents used for cleaning have a flash point of 100°F or more?

☐ Are fire-control sprinkler heads kept clean?

☐ Are “NO SMOKING” signs posted in the spray areas, paint rooms, paint booths, and paint storage areas?

☐ Is the spray area kept clean of combustible residue?

☐ Are spray booths constructed of metal, masonry, or other substantial noncombustible material?

☐ Are the spray booths’ floors and baffles noncombustible and easily cleaned?

☐ Is infrared drying apparatus kept out of the spray area during spraying operations?

☐ Is the spray booth completely ventilated before the drying apparatus is used?

☐ Is the electric drying apparatus properly grounded?

- ☐ Do all drying spaces have adequate ventilation?

- ☐ Are lighting fixtures for spray booths located outside the booth, and the interior lighted through sealed clear panels?
- ☐ Are the electric motors for exhaust fans placed outside booths or ducts?
- ☐ Are belts and pulleys inside the booth fully enclosed?
- ☐ Do ducts have access doors to allow cleaning?

Flammable and combustible materials

- ☐ Is combustible scrap, debris, and waste stored in covered metal receptacles and removed from the work site promptly?
- ☐ Are proper storage methods used to minimize the risk of fire and spontaneous combustion?
- ☐ Are approved containers and tanks used for the storage and handling of flammable and combustible liquids?
- ☐ Are connections tight on all drums and combustible liquid piping (vapor and liquid)?
- ☐ Are all flammable liquids kept in closed containers when not in use?
- ☐ Are bulk drums of flammable liquids grounded and bonded to containers during dispensing?
- ☐ Do storage rooms for flammable and combustible liquids have explosion-proof lights?
- ☐ Do storage rooms for flammables and combustible liquids have mechanical or gravity ventilation?
- ☐ Are safe practices followed when liquid petroleum gas is stored, handled, and used?
- ☐ Are liquefied petroleum storage tanks guarded to prevent damage from vehicles?
- ☐ Are all solvent wastes and flammable liquids kept in fire-resistant, covered containers until they are removed from the work site?
- ☐ Is vacuuming used rather than blowing or sweeping combustible dust when possible?
- ☐ Are fire separators placed between stacked containers of combustibles or flammables to ensure their support and stability?

☐ Are fuel-gas cylinders and oxygen cylinders separated by distance, fire-resistant barriers, or other means while in storage?

☐ Are fire extinguishers provided for the type of materials they will extinguish, and placed in areas where they are to be used?

CLASS A: Ordinary combustible materials fires

CLASS B: Flammable liquids, gas, or grease fires

CLASS C: Energized-electrical equipment fires

☐ If a Halon 1301 fire extinguisher is used, can employees evacuate within the specified time for that extinguisher?

☐ Are appropriate fire extinguishers mounted within 75 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials?

☐ Do only trained personnel transfer or withdrawal flammable or combustible liquids?

☐ Are fire extinguishers mounted so that employees do not have to travel more than 75 feet for a Class A fire or 50 feet for a Class B fire?

☐ Are employees trained in the use of fire extinguishers?

☐ Are all extinguishers serviced, maintained, and tagged at least yearly?

☐ Do record required monthly checks of extinguishers?

☐ Are all extinguishers fully charged and in their designated places? Are extinguishers free from obstruction or blockage?

☐ Where sprinkler systems are permanently installed, are the nozzle heads directed or arranged so that water will not be sprayed into operating electrical switchboards and equipment?

☐ Are “NO SMOKING” signs posted in areas where flammable or combustible materials are used or stored?

☐ Are “NO SMOKING” signs posted on tanks of liquefied petroleum gas?

☐ Are “NO SMOKING” rules enforced in areas involving storage and use of flammable materials?

☐ Are safety cans used for dispensing flammable or combustible liquids?

☐ Are all spills of flammable or combustible liquids cleaned up promptly?

Fire protection

☐ If your workplace has 11 or more employees, does it have a written fire-prevention plan?

☐ Does the plan describe the types of fire protection equipment and systems that are available?

☐ Have you established practices and procedures to control potential fire hazards and ignition sources?

☐ Are employees aware of the fire hazards of the materials and processes to which they are exposed?

☐ If your workplace has a fire alarm system, is it tested at least annually?

☐ Do metal guards protect sprinkler heads where they could be physically damaged?

☐ Is proper clearance maintained below sprinkler heads?

☐ Are portable fire extinguishers provided in adequate numbers and types?

☐ Are fire extinguishers mounted in readily accessible locations?

☐ Are fire extinguishers recharged regularly, with dates noted on the inspection tags?

☐ If employees are expected to use fire extinguishers and fire protection procedures, are they trained?

☐ If employees are not trained to use fire extinguishers, are they trained to immediately evacuate the building in a fire emergency?

Ventilation for indoor air quality

☐ Does the HVAC system provide at least the quantity of outdoor air designed into the system at the time the building was constructed?

☐ Is the HVAC system inspected at least annually and maintained so that it is clean and efficient?

☐ Are efforts made to purchase furnishings or building treatments that do not give off toxic or offensive vapors?

☐ Are indoor air quality complaints investigated, and are the results conveyed to workers?

Welding, cutting and brazing

☐ Do you allow only authorized and trained personnel to use welding, cutting, or brazing equipment?

☐ Are compressed gas cylinders regularly examined for signs of defect, deep rusting, or leakage?

☐ Are cylinders kept away from sources of heat?

☐ Are employees prohibited from using cylinders as rollers or supports?

☐ Are empty cylinders appropriately marked, their valves closed, and valve-protection caps placed on them?

☐ Are signs posted that read "DANGER — NO SMOKING, MATCHES, OR OPEN LIGHTS," or the equivalent?

☐ Are cylinders, cylinder valves, couplings, regulators, hoses, and apparatus kept free of oily or greasy substances?

☐ Unless secured on special trucks, are regulators removed and valve-protection caps put in place before moving cylinders?

☐ Do cylinders without fixed hand wheels have keys, handles, or nonadjustable wrenches on stem valves when in service?

☐ Are liquefied gases stored and shipped with the valve end up and with valve covers in place?

☐ Before a regulator is removed, is the valve closed and gas then released from the regulator?

☐ Is open circuit (no load) voltage of arc welding and cutting machines as low as possible and not more than the recommended limit?

☐ Are electrodes removed from holders when not in use?

☐ Are employees required to shut off the electric power to the welder when no one is using it?

☐ Is suitable fire-extinguishing equipment available for immediate use?

☐ Are welders forbidden to coil or loop welding electrode cable around their bodies?

- ☐ Is work and electrode lead cable frequently inspected for wear and damage and replaced when needed?
- ☐ Do the means for connecting cable lengths have adequate insulation?
- ☐ When the object to be welded cannot be moved and fire hazards cannot be removed, are shields used to confine heat, slag, and sparks?
- ☐ Are fire watchers assigned when welding or cutting is performed in locations where a fire might develop?
- ☐ When welding is done on metal walls, are precautions taken to protect combustibles on the other side?
- ☐ Before hot work begins, are drums, barrels, tanks, and other containers thoroughly cleaned and tested so that no substances remain that could explode, ignite, or produce toxic vapors?
- ☐ Do eye-protection helmets, hand shields, and goggles meet appropriate standards?
- ☐ Do employees use appropriate PPE when exposed to the hazards of welding, cutting, or brazing operations?
- ☐ Do you check for adequate ventilation where welding or cutting is performed?
- ☐ When welders work in confined spaces is the atmosphere monitored and is there a means for their quick evacuation in an emergency?
- ☐ Are regulator-pressure adjusting screws released when welding or cutting is stopped for an extended period of time?

Personal protective equipment (PPE)

- ☐ Have you assessed workplace hazards that might require PPE and reviewed related injuries?
- ☐ Has the assessment been documented?
- ☐ Does the documentation identify the workplace evaluated?
- ☐ Has training been provided to each employee who is required to wear PPE?
- ☐ Has the training been documented?
- ☐ Are protective goggles or face shields provided to employees and worn when there may be danger of flying material or caustic or corrosive materials?

- ☐ Are ANSI-approved safety glasses worn at all times in areas where there is risk of eye injury?
- ☐ Are protective gloves, aprons, or shields provided to employees for protection against cuts, corrosive liquids, and chemicals?
- ☐ Are hardhats provided and worn where there is a danger of falling objects?
- ☐ Are hardhats inspected periodically for damage to the shell and the suspension system?
- ☐ Do employees exposed to vehicular traffic wear high visibility garments that make them stand out from their surroundings?
- ☐ Do workers wear reflective garments at night?
- ☐ Are appropriate respirators provided for regular or emergency use where they are necessary?
- ☐ Is there a written respirator program?
- ☐ Are the respirators inspected before and after each use?
- ☐ Is a written record kept of all inspection dates and findings?
- ☐ Have all employees been trained in work procedures, and proper use and maintenance of protective clothing and equipment for cleaning up spilled toxic or other hazardous materials or liquids?
- ☐ Is a spill kit available for employees to clean up spilled toxic or hazardous materials?
- ☐ Are employees required to wear safety shoes when they are exposed to conditions that could cause foot injuries?
- ☐ Is all protective equipment sanitary and ready to use?
- ☐ Is there an eyewash facility and a quick-drench shower in each work area where employees are exposed to caustic or corrosive materials?
- ☐ Do employees have lunch areas in areas where there is no exposure to toxic materials?
- ☐ Is protection from occupational noise provided when sound levels exceed those of the OR-OSHA hearing conservation standard — 1910.95?

Noise: hearing conservation

- ☐ Are there areas in your workplace where continuous noise levels exceed 85 dBA?
- ☐ Are noise levels measured using a sound-level meter or an octave band analyzer, and are you keeping records of these levels?
- ☐ Have you tried isolating noisy machinery from the rest of your operation?
- ☐ Have engineering controls been used to reduce excessive noise?
- ☐ Where engineering controls are not feasible, are administrative controls used to minimize employee exposure to noise?
- ☐ Is there a preventive health program that educates employees about safe levels of noise and exposure, effects of noise on their health, and use of personal protection?
- ☐ Are employees who are exposed to continuous noise above 85 dBA retrained annually?
- ☐ Have you identified and posted work areas in which noise levels make voice communication difficult?
- ☐ Does every employee working in areas where noise levels exceed 90 dBA use approved hearing protection equipment (noise attenuating devices)?
- ☐ Are employees properly fitted and instructed in the proper use and care of hearing protection?
- ☐ Are employees who are exposed to continuous noise above 85 dBA given periodic audiometric testing to ensure that you have an effective hearing-protection system?

Environmental controls

- ☐ Are all work areas properly lit?
- ☐ Are hazardous substances identified that may cause harm by inhalation, ingestion, skin absorption, or contact?
- ☐ Are employees aware of the hazards involved with the various chemicals they may be exposed to in their work environment, such as ammonia, chlorine, epoxies, and caustics?
- ☐ Is employee exposure to chemicals in the workplace kept within acceptable levels? Can a less harmful method or product be used?

- ☐ Is the work area's ventilation system appropriate for the work being performed?
- ☐ Are proper precautions taken by employees handling asbestos and other fibrous materials?
- ☐ Are caution labels and signs used to warn of asbestos?
- ☐ Is the presence of asbestos determined before the beginning of any repair, demolition, construction, or reconstruction work?
- ☐ Are asbestos-covered surfaces kept in good repair to prevent release of fibers?
- ☐ Are wet methods used (when practicable) to prevent emission of airborne asbestos fibers, silica dust, and similar hazardous materials?
- ☐ Is vacuuming dust with appropriate equipment conducted rather than blowing or sweeping?
- ☐ Are grinders, saws, and other machines that produce dust vented to an industrial collector or a central-exhaust system?
- ☐ Are all local-exhaust ventilation systems designed and operated properly at the airflow and volume necessary for the application?
    - ☐ Are the ducts free of obstructions?
    - ☐ Have you ensured that belts are not slipping?
- ☐ Is personal protective equipment provided, used, and maintained whenever required?
- ☐ Are written standard operating procedures available for selection and use of respirators?
- ☐ Are restrooms and washrooms sanitary?
- ☐ Is potable water provided for drinking, washing, and cooking?
- ☐ Are all outlets for water that is not suitable for drinking, clearly identified?
- ☐ Are employees instructed how to properly lift heavy objects?
- ☐ Where heat is a problem, have all fixed work areas been provided with a proper means of cooling?
- ☐ If employees work on streets and roadways where they are exposed to traffic hazards, are they required to wear high-visibility clothing?

☐ Are exhaust stacks and air intakes located so that contaminated air will not be recirculated within a building or other enclosed area?

Electrical safety

☐ Are workplace electricians familiar with OR-OSHA electrical safety rules?

☐ Do you require compliance with OR-OSHA rules on all contract electrical work?

☐ Are all employees required to report as soon as possible obvious hazards to life or property observed concerning electrical equipment or lines?

☐ Are employees instructed to make preliminary inspections and/or appropriate tests to determine what conditions exist before starting work on electrical equipment or lines?

☐ When electrical equipment or lines are to be serviced, maintained, or adjusted, are necessary switches opened, locked out, and tagged?

☐ If portable hand-held electrical tools and equipment are not grounded are they double-insulated?

☐ Are electrical appliances such as vacuum cleaners, polishers, and vending machines grounded?

☐ Do extension cords have a grounding conductor?

☐ Are multiple plug adapters prohibited?

☐ Are ground-fault circuit interrupters installed on each temporary 15-, 20-, or 30-ampere, 125-volt AC circuit where construction, demolition, modifications, alterations, or excavations are performed?

Or

☐ Do you have an assured equipment-grounding conductor program?

☐ Are all temporary circuits protected by suitable disconnecting switches or plug connectors at the junction with permanent wiring?

☐ Do you promptly repair or replace exposed wiring and cords with frayed or deteriorated insulation?

☐ Are flexible cords and cables free of splices or taps?

- ☐ Are clamps or other securing means provided on flexible cords or cables at plugs, receptacles, tools, equipment, and is the cord jacket securely held in place?
- ☐ Are all cord, cable, and raceway connections intact and secure?
- ☐ Are your electrical tools and equipment appropriate for use wet or damp locations (or otherwise protected)?
- ☐ Do you locate all electrical power lines and cables before digging, drilling, or doing similar work?
- ☐ Is the use of metal measuring tapes, ropes, hand lines, or devices with metallic thread woven into the fabric prohibited where they could come into contact with energized parts of equipment or circuit conductors?
- ☐ Are metal ladders prohibited in areas where the ladder or the person using the ladder could be exposed to energized parts of equipment, fixtures, or circuit conductors?
- ☐ Are all disconnecting switches and circuit breakers labeled to indicate their use or equipment served?
- ☐ Are disconnecting means always opened before fuses are replaced?
- ☐ Do all interior wiring systems include provisions for grounding metal parts or electrical raceways, equipment, and enclosures?
- ☐ Are all electrical raceways and enclosures securely fastened?
- ☐ Are approved cabinets or enclosures used to protect against accidental contact with energized parts of electrical circuits?
- ☐ Is sufficient access and working space provided and maintained around all electrical equipment to permit ready and safe operations and maintenance?
- ☐ Are all unused openings (including conduit knockouts) of electrical enclosures and fittings closed with appropriate covers, plugs, or plates?
- ☐ Are electrical enclosures such as switches, receptacles, and junction boxes provided with tight-fitting covers or plates?
- ☐ Are employees prohibited from working alone on energized lines or equipment over 600 volts?
- ☐ Are employees forbidden from working closer than 10 feet from high-voltage (over 750

volts) lines?

Ergonomics: computer workstations

Work posture

☐ Are head and neck are upright or in line with the torso (not bent down or back)?

☐ Are head, neck, and trunk face forward (not twisted)?

☐ Is the trunk perpendicular to the floor (may lean back into backrest but not forward)?

☐ Are shoulders and upper arms are in line with the torso, perpendicular to the floor, and relaxed?

☐ Are upper arms and elbows are close to the body (not extended outward)?

☐ Are forearms, wrists, and hands are straight and in line?

☐ Are wrists and hands are straight (not bent up, down, or sideways)?

☐ Are thighs are parallel to the floor and the lower legs are roughly perpendicular to floor?

☐ Are feet resting flat on the floor or supported by a stable footrest?

☐ Do computer users alternate computer tasks and other activities or take short breaks to reduce fatigue?

Chair

☐ Does the backrest support the lower back (lumbar area)?

☐ Does the depth and width of the seat pan accommodate the user (seat pan not too big or small)?

☐ Is there a space between the seat pan and the back of the knees and lower legs (seat pan not too long)?

☐ Is the seat pan is cushioned and rounded with a “waterfall” front (no sharp edge)?

☐ Do armrests, if used, support the forearms and do not restrict movement?

Keyboard and pointing device

☐ Is the keyboard platform stable and large enough to hold a keyboard and a pointing device?

☐ Is the pointing device next to the keyboard so it can be operated without reaching?

☐ Is the pointing device easy to activate and fits the hand comfortably?

☐ Do the wrists and hands rest on surfaces that are not sharp or hard?

Monitor

☐ Is the top of the screen at or below eye level so that it can be read without bending the neck?

☐ Can those who wear bifocal or trifocal lenses read the screen without bending their necks?

☐ Does the monitor distance allow one to read the screen without leaning forward or backward?

☐ Is the monitor is directly in front of the user?

☐ Is the screen free from glare from windows or other light sources?

Desk or other work surface

☐ Is there enough space between the top of the user's thighs and the work surface or keyboard platform so that the thighs aren't trapped?

☐ Is there enough space under the work surface for the legs and feet so that the user can get close enough to the keyboard to type comfortably?

Accessories

☐ Is the document holder stable and large enough to hold documents?

☐ Is the document holder about the same height and distance from the user as the monitor screen?

☐ Are palm rests padded and free of sharp or square edges?

☐ Do palm rests allow the forearms, wrists, and hands to remain in a straight line?

☐ Can a telephone be used with the head upright (not bent) and the shoulders relaxed?

Ergonomics: general

☐ Can the work be performed without eye strain or glare?

☐ Can the task be done without repetitive lifting of the arms above the shoulder level?

☐ Can the task be done without the employee having to hold his or her elbows out and away from the body?

☐ Can employees keep their hands or wrists in a neutral position when they are working?

☐ Are mechanical assists available to the worker performing materials-handling tasks?

- ☐ Can the task be done without having to stoop the neck and shoulders to view the work?
- ☐ Are pressure points on body parts such as wrists, forearms, backs of thighs avoided?
- ☐ Can the work be done using the larger muscles of the body?
- ☐ Are there sufficient rest breaks, in addition to scheduled rest breaks, to relieve stress from repetitive-motion tasks?
- ☐ Are tools, instruments, and machinery shaped, positioned, and handled so that tasks can be performed comfortably?
- ☐ Are all pieces of furniture adjusted, positioned, and arranged to minimize strain on the body?
- ☐ Are lifts confined within the knuckle-to-shoulder zone?
- ☐ Is work arranged so that workers are not required to lift and carry too much weight?
- ☐ If workers have to push or pull objects using great amounts of force, are mechanical aids provided?

Medical services and first aid

- ☐ Have you developed an emergency medical plan?
- ☐ Are emergency phone numbers posted?
- ☐ Are first-aid kits with necessary supplies easily accessible to each work area, periodically inspected, and replenished as needed?
- ☐ Are means provided for quick drenching or flushing of the eyes and body in areas where caustic or corrosive liquids or materials are handled?