

# DEFINITIONS (CONCLUSION)

- Lock-Out: means the placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
- Lower Flammable Limit or Lower Explosive Limit: means the minimum concentration of a substance in air needed for an ignition source to cause a flame or explosion.
- Monitor or Monitoring: means the process used to identify and evaluate the hazards after an authorized entrant enters the space.
- Non-entry rescue: occurs when a rescue service, usually the attendant, retrieves employees in a permit space without entering the permit space.

## 5 KEY DIFFERENCES CONSTRUCTION CONFINED SPACE:

- More detailed provisions requiring coordinated activities when there are multiple employers at the worksite.
- Requiring a competent person to evaluate the work site and identify confined spaces, including permit spaces.
- Requiring continuous atmospheric monitoring whenever possible.

## 5 KEY DIFFERENCES CONSTRUCTION CONFINED SPACE (CONTINUED):

- Requiring continuous monitoring of engulfment hazards. For example, when workers are performing work in a storm sewer, a storm upstream from the workers could cause flash flooding.
- Allowing for the suspension of a permit, instead of cancellation, in the event of changes from the entry conditions list on the permit or an unexpected event requiring evacuation of the space. The space must be returned to the entry conditions listed on the permit before re-entry.

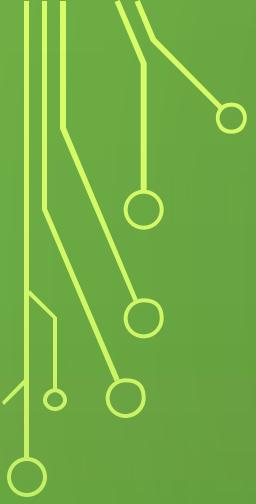
## FATALITY/INJURY REPORTS

- Expected to save 800 construction workers a year from serious injury

# COMPONENTS OF A CONFINED SPACE PLAN

## Basic Elements

- Management leadership and employee participation
- Hazard identification and assessment
- Hazard prevention and control
- Information and training
- Evaluation of program effectiveness



# TRAINING

- Training of:
    - Attendant
    - Entrant
    - Supervisor
    - Controlling contractor
    - Host Employer
- 



# ATTENDANT

- Remain outside the permit space during entry operations unless relieved by another authorized attendant;
- Perform non-entry rescues when specified by the employer's rescue procedure;
- Know existing and potential hazards, including information on the mode of exposure, signs or symptoms, consequences and physiological effects;
- Maintain communication with and keep an accurate account of those workers entering the permit space;

# ATTENDANT CONTINUED

- Order evacuation of the permit space when:
  - A prohibited condition exists;
  - A worker shows signs of physiological effects of hazard exposure;
  - An emergency outside the confined space exists; and
  - The attendant cannot effectively and safely perform required duties.
- Summon rescue and other services during an emergency;
- Ensure that unauthorized people stay away from permit spaces or exit immediately if they have entered the permit space;
- Inform authorized entrants and the entry supervisor if any unauthorized person enters the permit space; and
- Perform no other duties that interfere with the attendant's primary duties.



# ENTRANT

- Know space hazards, including information on the means of exposure such as inhalation or dermal absorption, signs of symptoms and consequences of the exposure;
  - Use appropriate personal protective equipment properly;
  - Maintain communication with attendants as necessary to enable them to monitor the entrant's status and alert the entrant to evacuate when necessary;
  - Exit from the permit space as soon as possible when:
    - Ordered by the authorized person;
    - He or she recognizes the warning signs or symptoms of exposure;
    - A prohibited condition exists; or
    - An automatic alarm is activated.
  - Alert the attendant when a prohibited condition exists or when warning signs or symptoms of exposure exist.
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# SUPERVISOR

- Know space hazards including information on the mode of exposure, signs or symptoms and consequences;
- Verify emergency plans and specified entry conditions such as permits, tests, procedures and equipment before allowing entry;
- Terminate entry and cancel permits when entry operations are completed or if a new condition exists;
- Verify that rescue services are available and that the means for summoning them are operable, and that employer will be notified as soon as services become unavailable;
- Take appropriate measures to remove unauthorized entrants; and
- Ensure that entry operations remain consistent with the entry permit and that acceptable entry conditions are maintained

# CONTROLLING CONTRACTOR

- Share information it has about permit space hazards with entry employers and other employers whose activities may create hazards in the permit space.
- Coordinate entry operations when there is more than one entry employer.
- Coordinate operations when permit space entry occurs during other activities at the site that might create a hazard in the space.

# HOST EMPLOYER

- The assessment and identification of permit spaces of the workplace must have been conducted. The host employer must advise the contractor of any permit spaces on their premises that the contractor may have a reason to enter.
- The permit space must only be entered by the contractor in compliance with a PRCS program. The host and contractor must agree as to exactly what program will be followed.
- The host employer must communicate the hazards in the space and the reasoning behind designating the space as a permit-required.
- Hosts must also inform contractors of any entry precautions that have been implemented.
- Hosts must coordinate operations with the contractor when host and contractor employees will be working in or near permit spaces.
- At the end of the entry operations, the contractor must debrief the host regarding the permit program and any hazards confronted in the space during entry operations.



# ENTRY PERMIT SYSTEMS



- Written permit signed by entry supervisor.
- Verifies pre-entry precautions have been taken and the space is safe to enter.
- Posted at entry to confined space.
- Specifies apparent hazards and corrective actions taken prior to entry.
- Requires termination of permit when task is completed or when new conditions exist.
- Reasons for suspending the entry
- Communication procedures during entry
- Requires termination of permit when task is completed or when new conditions exist.
- Reasons for suspending the entry
- Communication procedures during entry

# ENTRY PERMIT REQUIREMENTS

- Date, location, and name of confined space.
- Purpose of entry and known hazards.
- Duration of entry permit time.
- Authorized entrants, attendants, supervisors.
- Rescue and emergency services identified and means to summons.
- Air testing results - signature of tester.
- Equipment – PPE, Testing, Communication, & Rescue
- Protective measures to be taken.
  - Ventilation, Isolation, Flushing
  - Lockout / Tag out, Purging

CSB- CONFINED SPACE

[HTTPS://YOUTU.BE/F2ITJE2INCS](https://youtu.be/f2itje2inCs)



# HAZARDS IN CONFINED SPACE

## ATMOSPHERIC

- Oxygen Deficient/enriched
- Flammable Atmosphere
- Toxic Atmosphere

## CHEMICAL

- Inerting Operations – Carbon Dioxide, Nitrogen
- Chemical Reactions
  - Manufacturing
  - Cleaning
  - Curing
  - Stored products

# HAZARDS IN CONFINED SPACE (CONTINUED)

## ENGULFMENT

- Trapped by a liquid or finely divided solid

## MOVING EQUIPMENT

- Entrapment in the equipment
- Electrocution
- Create engulfment hazard

# HAZARDS IN CONFINED SPACE (CONCLUSION)

## MANY OTHER HAZARDS

- Falls
- Poor Lighting
- Noise
- Electrical
- Thermal

# OXYGEN DEFICIENT ATMOSPHERE

19.5 %

- Minimum acceptable oxygen level.

15 - 19%

- Decreased ability to work strenuously.

Impair coordination. Early symptoms.

12-14%

- Respiration increases. Poor judgment.

10-12%

- Respiration increases. Lips blue.

8-10%

- Mental failure. Fainting. Nausea

Unconsciousness. Vomiting.

6-8%

- 8 minutes - fatal, 6 minutes - 50% fatal

4-5minutes - possible recovery.

4-6%

- Coma in 40 seconds. Death

# OXYGEN ENRICHED

- Oxygen level above 22%.
- Causes flammable and combustible materials to burn violently when ignited.
- Hair, clothing, materials, etc.
- Oil soaked clothing and materials.
- Never use pure oxygen to ventilate.
- Never store or place compressed tanks in a confined space.

# FLAMMABLE ATMOSPHERE

- Critical Factors:
  - Oxygen content in the air
  - Presence of a flammable gas, or vapor
  - Presence of dust (visibility of 5' or less)
- Proper air/gas mixture can lead to explosion
- Typical Ignition Sources:
  - Sparking or electric tool
  - Static Electricity
  - Welding / cutting operations.
  - Smoking

# TOXIC ATMOSPHERES

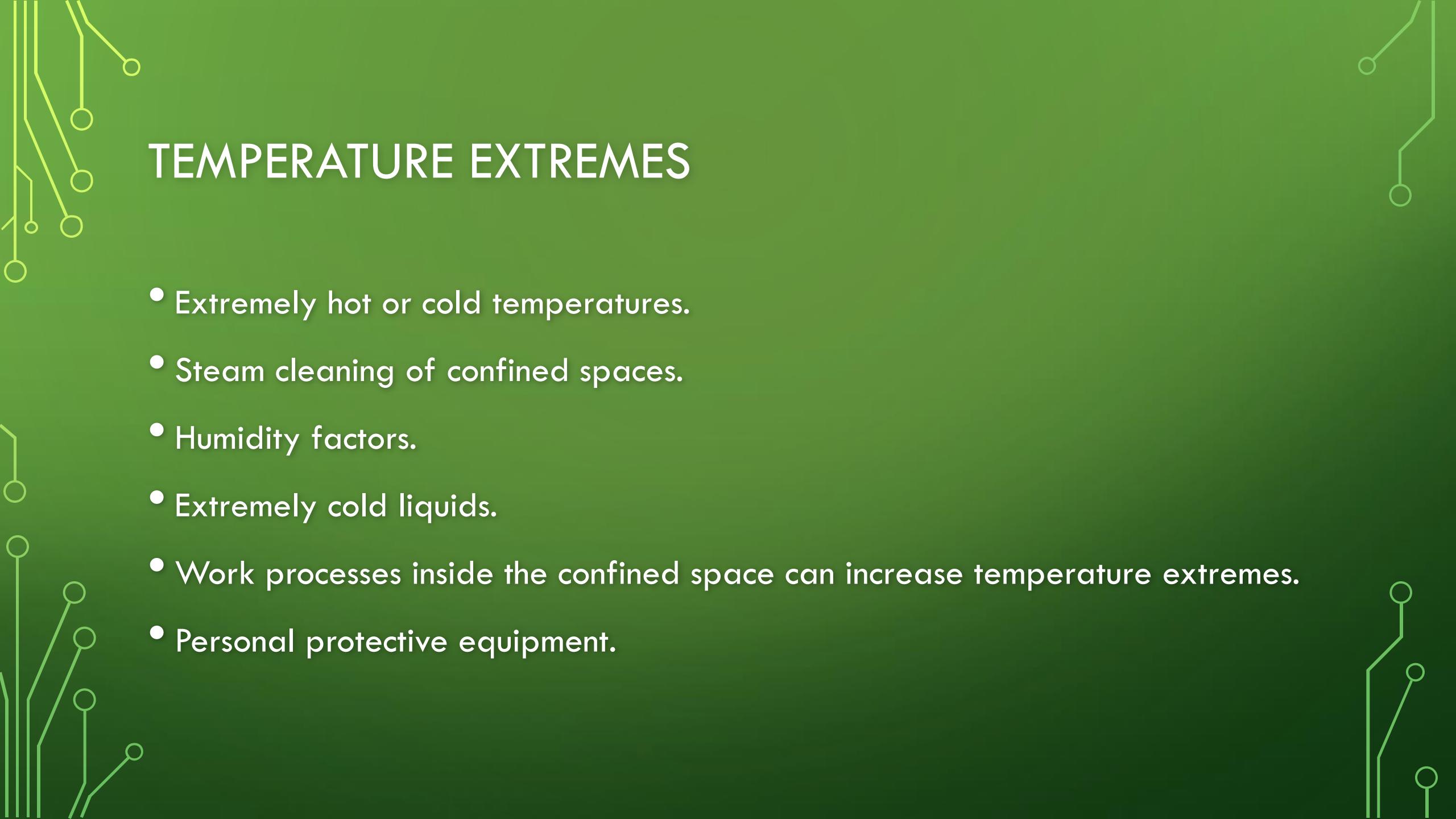
- Product stored in a confined space:
  - Gases released when cleaning.
  - Materials absorbed into walls of confined space.
  - Decomposition of materials in the confined space.
- Work performed in a confined space:
  - Welding, cutting, brazing, soldering.
  - Painting, scraping, sanding, degreasing.
  - Sealing, bonding, melting.
- Areas adjacent to a confined space.
  - Exhaust, pumps, generators



# CARBON MONOXIDE

- Odorless, Colorless Gas.
- Combustion By-Product.
- Quickly collapse at high concentrations.

<u>PPM</u>	<u>Effect</u>	<u>Time</u>
• 50	Permissible Exposure Level	8 Hours
• 200	Slight headache, discomfort	3 Hours
• 600	Headache, discomfort	1 Hour
• 1000-2000	Confusion, nausea, headache	2 Hours
• 1000-2000	Tendency to stagger	1 1/2 Hours
• 1000-2000	Slight heart palpitation	30 Min.
• 2000-2500	Unconsciousness	30 Min.



# TEMPERATURE EXTREMES

- Extremely hot or cold temperatures.
- Steam cleaning of confined spaces.
- Humidity factors.
- Extremely cold liquids.
- Work processes inside the confined space can increase temperature extremes.
- Personal protective equipment.

# ENGULFMENT HAZARDS

- Loose, granular materials stored in bins and hoppers - grain, sand, coal, etc.
- Crusting and bridging below a worker.
- Flooding of confined space.
- Water or sewage flow.

# OTHER HAZARDS

- Noise

- Amplified due to acoustics within the space.
- Damaged hearing, affect communication.

- Slick / Wet Surfaces

- Slips and falls.
- Increased chance of electric shock.

- Falling Objects

- Topside openings expose workers inside confined space to falling objects.

- Mechanical

- Drive Shafts
- Drive Gears

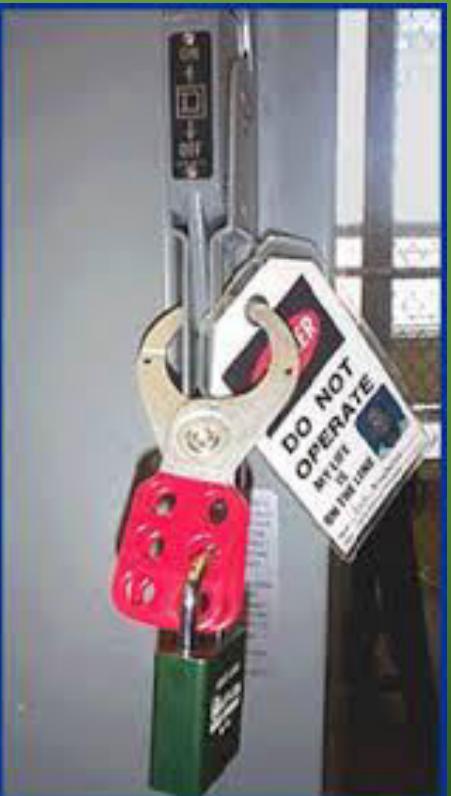
# LOCKOUT TAG OUT

## TYPES OF ENERGY

- Electrical
- Gravitational
- Water
- Gas
- Steam
- Pneumatic
- Thermal
- Chemical
- Many other energy sources



# LOCKOUT TAG OUT (CONTINUED)



## SOME PRACTICES INCLUDE

- Locking and tagging out electrical sources.
- Blanking and bleeding pneumatic and hydraulic lines.
- Disconnecting mechanical drives and shafts.
- Securing mechanical parts.
- Blanking sewer and water flow.
- Locking and tagging out shutoff valves.

# TESTING THE ATMOSPHERE

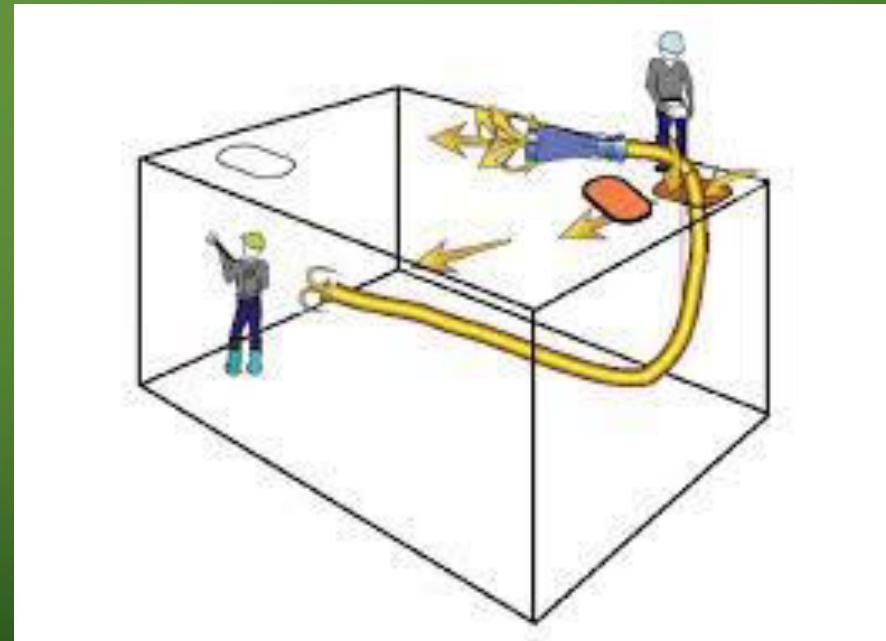
## HOW TO TEST

- Verify presence of safe work atmosphere.
- Test all areas of a confined space.
  - Top, Middle, Bottom, and each end



# VENTILATION

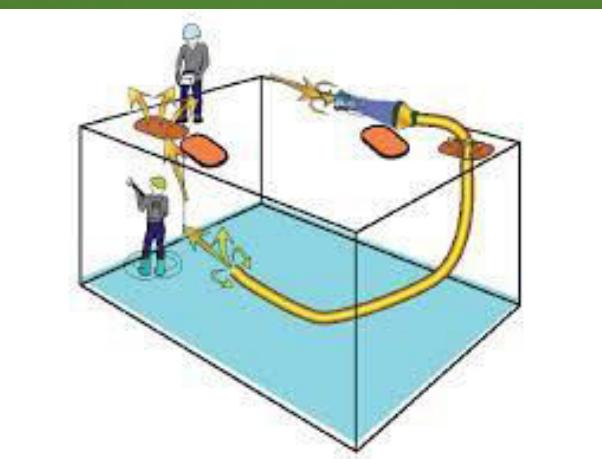
- First option to correct problems.
- Must be aware of hazards you are trying to correct in the confined space.
- Air intake in a safe location to draw fresh air only.
- Continuous ventilation whenever possible.
- Retest the confined space before entry.
- Continuous testing of the air during entry.



# VENTILATION (CONTINUED)

## NATURAL

- Natural forces pull out the atmosphere and replace it
  - Very slow process



## MECHANICAL

- Use of fans and blowers, can be used to push new air in or pull out existing atmosphere
  - Only limited by the size of equipment used



## STANDBY / RESCUE

- Worker assigned to remain outside the confined space and be in constant contact with the workers inside.
- Know emergency rescue procedures.
- 60% of workers who die in confined spaces are would-be rescuers.
- Trained in use of emergency rescue equipment and PPE.



# RESCUE

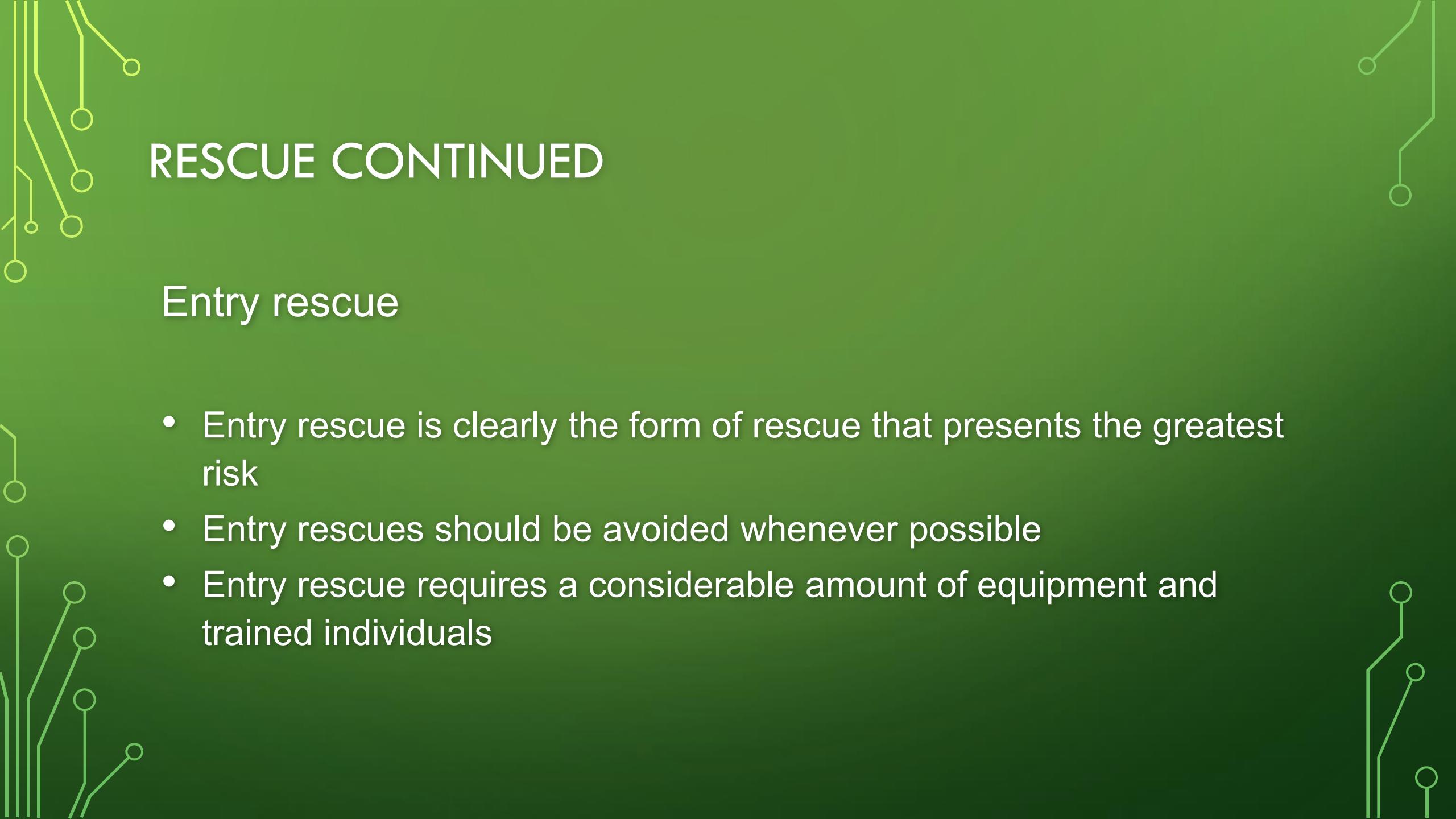


## NON ENTRY RESCUE

- Rescue is performed outside the space
- Prior to entry, a retrieval system and a body harness should be in place

## SELF RESCUE

- Entrant is capable to recognizing a hazard is present and is able to exit from the space



# RESCUE CONTINUED

## Entry rescue

- Entry rescue is clearly the form of rescue that presents the greatest risk
- Entry rescues should be avoided whenever possible
- Entry rescue requires a considerable amount of equipment and trained individuals

# CSB- NO ESCAPE

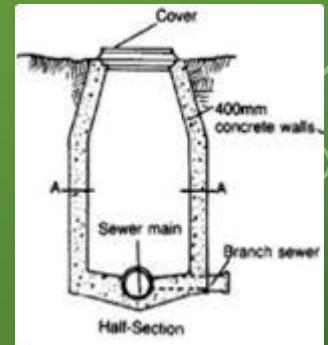
[HTTPS://YOUTU.BE/BEAXOIRJYD8](https://youtu.be/BEAXOIRJYD8)



## VIDEO REVIEW

- What could have been done to avoid the hazardous situation?
- What possible ways could their lives been saved?

# FATAL FACTS: ASPHYXIATION IN SEWER LINE MANHOLE



## Description of Accident:

- A construction foreman died from asphyxiation after entering a manhole with an uncontrolled hazardous atmosphere. Four construction workers were working in an inactive sewer system on a jobsite that was unoccupied for over a week. A few minutes after they started working, the crew noticed that the foreman was missing and a manhole cover was removed. While one worker called emergency services, a second worker entered the manhole to assist the foreman and found him unresponsive at the bottom of the  $20\frac{2}{3}$  ft. manhole. When the second worker became disoriented inside the manhole, another worker used a fan to blow fresh air into the manhole and the worker was able to climb out. The foreman was retrieved by fire department personnel and was later pronounced dead due to asphyxiation.

# WHAT WERE THE CAUSES OF INCIDENT?

- Workers were not trained to recognize confined space hazards and to take appropriate protective measures.
- The atmosphere in the manhole was not assessed to determine if conditions were acceptable before or during entry.
- Proper ventilation was not used to control atmospheric hazards in the manhole.
- Protective and emergency equipment was not provided at the worksite.
- An attendant was not stationed outside the manhole to monitor the situation and call for emergency services.

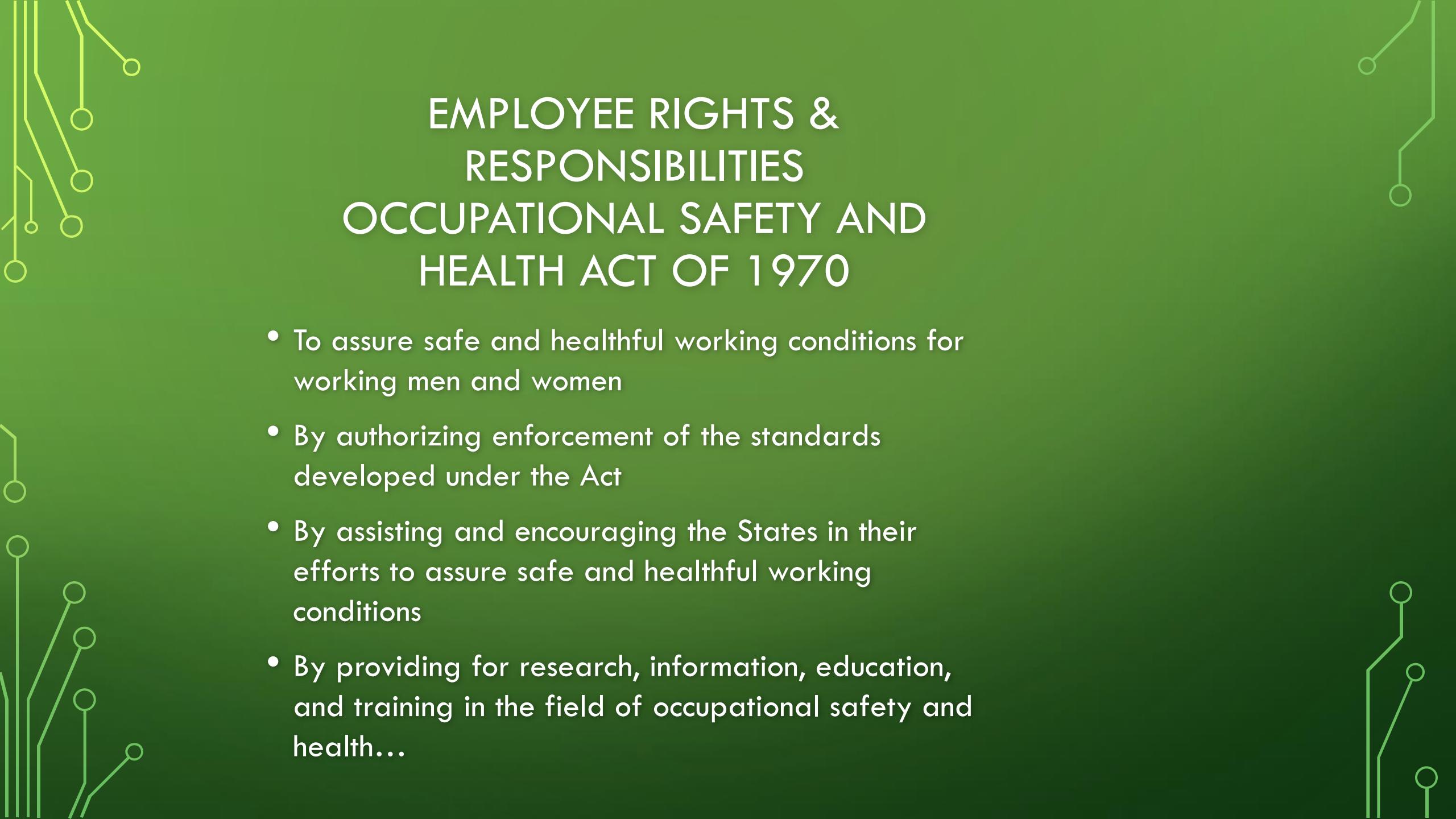
# CONFINED SPACE FATALITY

- Iowa OSHA also issued 29 serious citations totaling \$203,000 to Performance Contractors Inc. in Sergeant Bluff following a fatal incident in March. Inspectors concluded that the company failed to purge, flush and monitor a permitted confined space, exposing a worker to a fatal, oxygen-deficient atmosphere. The company failed to provide air monitoring equipment needed to fully test inside the permitted space, did not provide any rescue equipment or procedures for summoning rescue and emergency services, and failed to ensure that the workers were trained to understand the hazards experienced during confined space entry.



# QUESTIONS?

# WORKERS RIGHTS AND RESPONSIBILITIES



# EMPLOYEE RIGHTS & RESPONSIBILITIES OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

- To assure safe and healthful working conditions for working men and women
- By authorizing enforcement of the standards developed under the Act
- By assisting and encouraging the States in their efforts to assure safe and healthful working conditions
- By providing for research, information, education, and training in the field of occupational safety and health...



# EMPLOYEE RIGHTS & RESPONSIBILITIES

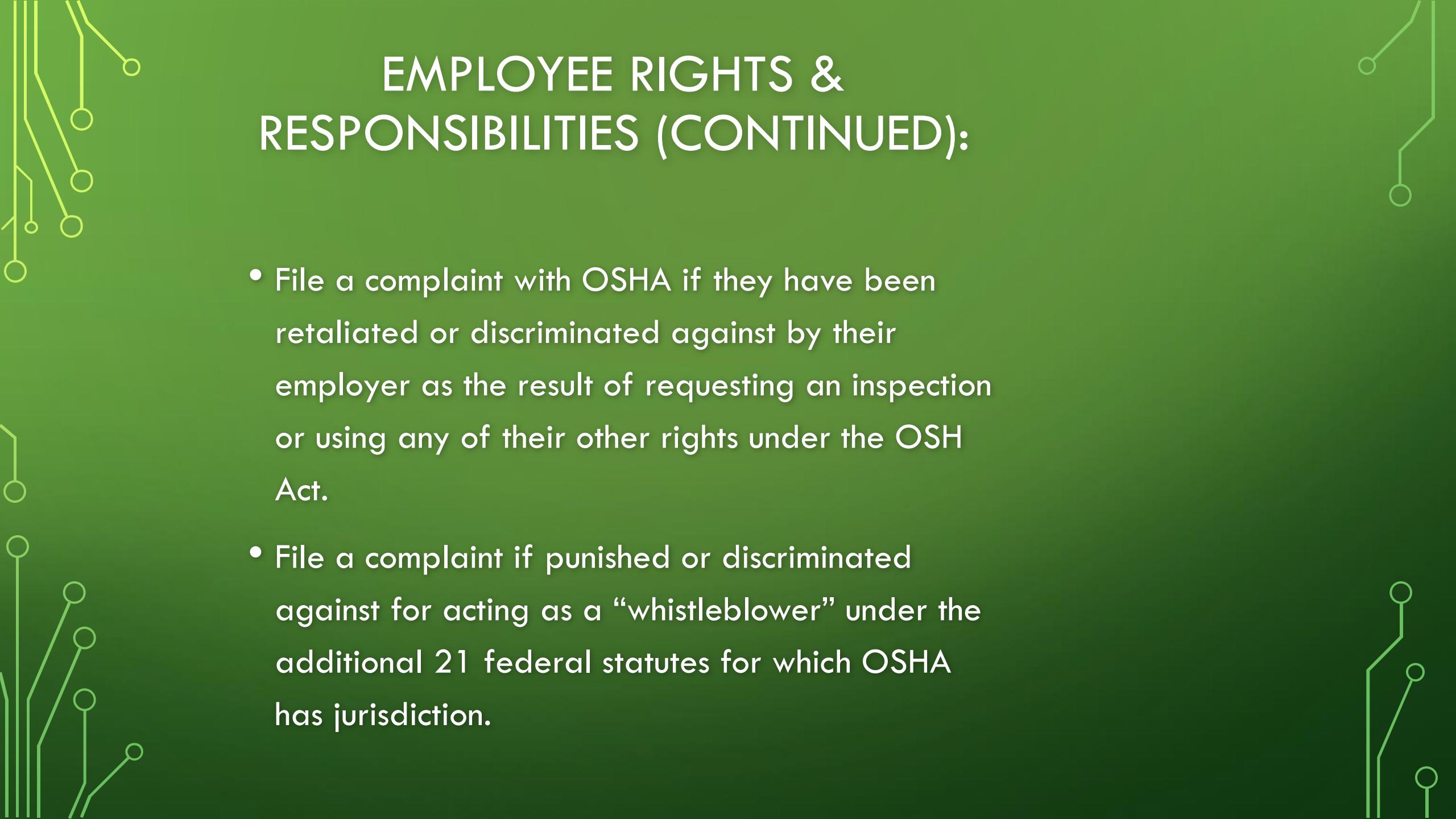
- You have the right to:
  - A safe and healthful workplace
  - Know about hazardous chemicals
  - Information about injuries and illnesses in your workplace
  - Complain or request hazard correction from employer



# EMPLOYEE RIGHTS & RESPONSIBILITIES

## ***YOU HAVE THE RIGHT TO:***

- File a confidential complaint with OSHA to have their workplace inspected.
- Receive information and training about hazards, methods to prevent harm, and the OSHA standards that apply to their workplace. The training must be done in a language and vocabulary workers can understand.
- Get copies of their workplace medical records and exposure records.
- Participate in an OSHA inspection and speak in private with the inspector.



# EMPLOYEE RIGHTS & RESPONSIBILITIES (CONTINUED):

- File a complaint with OSHA if they have been retaliated or discriminated against by their employer as the result of requesting an inspection or using any of their other rights under the OSH Act.
- File a complaint if punished or discriminated against for acting as a “whistleblower” under the additional 21 federal statutes for which OSHA has jurisdiction.

# WHISTLEBLOWER PROTECTION

Whistleblower Protection Advisory Committee (WPAC) was established to advise, consult with, and make recommendations to the Secretary of Labor and the Assistant Secretary of Labor for Occupational Safety and Health on ways to improve the fairness, efficiency, effectiveness, and transparency of OSHA's administration of whistleblower protections. In particular, the committee advises OSHA on the development and implementation of improved customer service models, enhancements in the investigative and enforcement process, training, and regulations governing OSHA investigations. In addition, WPAC advises OSHA in cooperative activities with other federal agencies that are responsible for areas covered by the whistleblower protection statutes enforced by OSHA.

# WHISTLEBLOWER PROTECTION (CONTINUED)

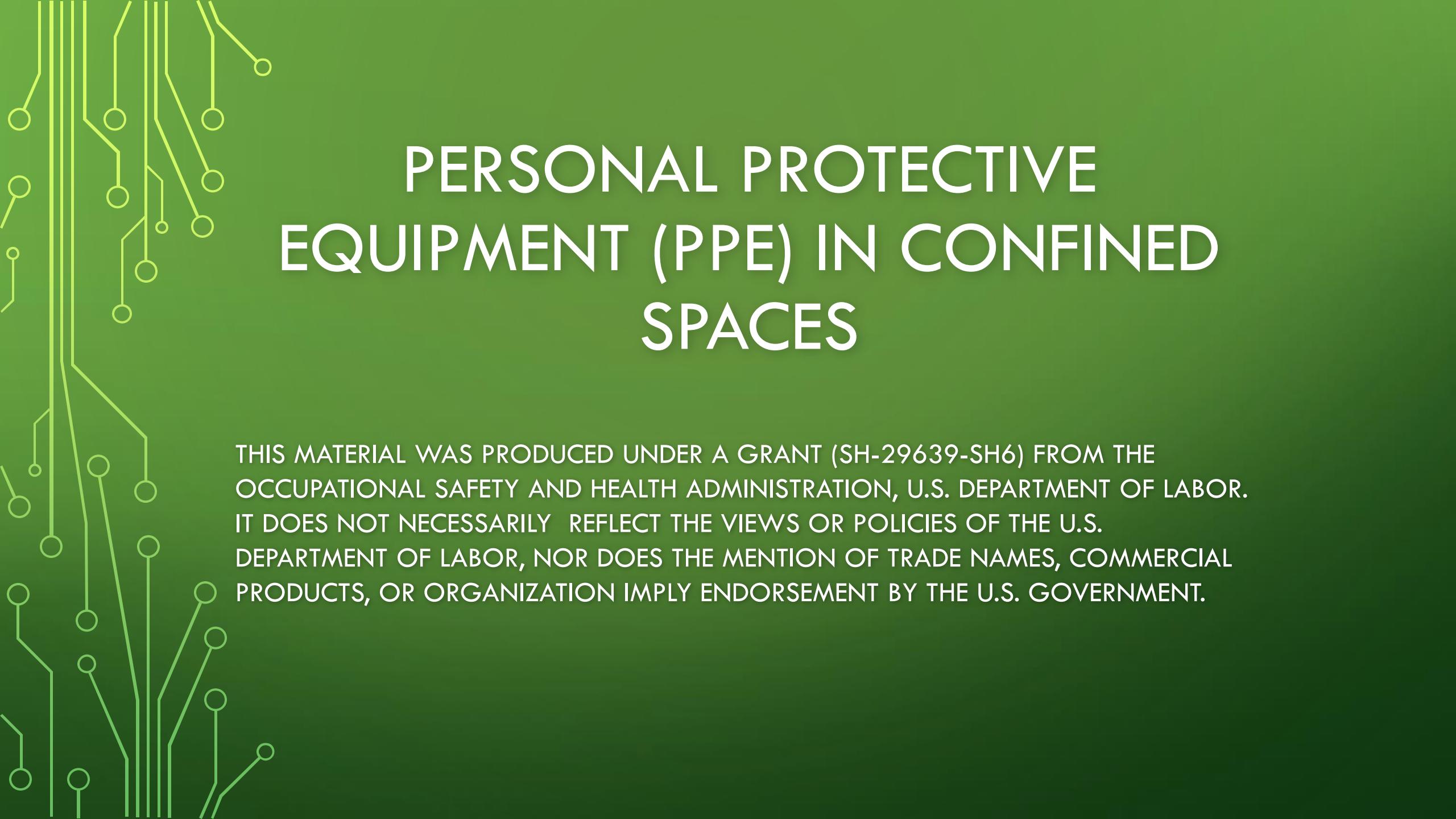
The screenshot shows the homepage of the United States Department of Labor's Occupational Safety and Health Administration (OSHA) website. The top navigation bar is red and features the U.S. Department of Labor logo, a search bar, and links to 'A to Z Index', 'En Español', 'Contact Us', 'FAQs', and 'About OSHA'. Below this, the OSHA logo is displayed, along with social media sharing icons and links to 'OSHA QuickTakes Newsletter' and 'RSS Feeds'. A 'We Can Help' button is also present. The main menu includes links to 'Home', 'Workers', 'Regulations', 'Enforcement', 'Data & Statistics', 'Training', 'Publications', 'Newsroom', 'Small Business', and 'Anti-Retaliation'. A secondary navigation bar below the main menu includes links to 'Home', 'File a Complaint', 'Fact Sheets & Statistics', 'News & Updates', 'Statutes', 'Regulations & Directives', 'Advisory Committee', 'Contacts & Links', and 'En español'. The central content area features a large blue banner with the text 'THE WHISTLEBLOWER Protection Programs'. To the right of the banner is a grid of six smaller images: a worker on a roof, a worker at a desk, an airplane, a factory floor, a tray of muffins, and a woman smiling.

# EMPLOYEE RIGHTS & RESPONSIBILITIES (CONCLUSION)

## Workers Rights:

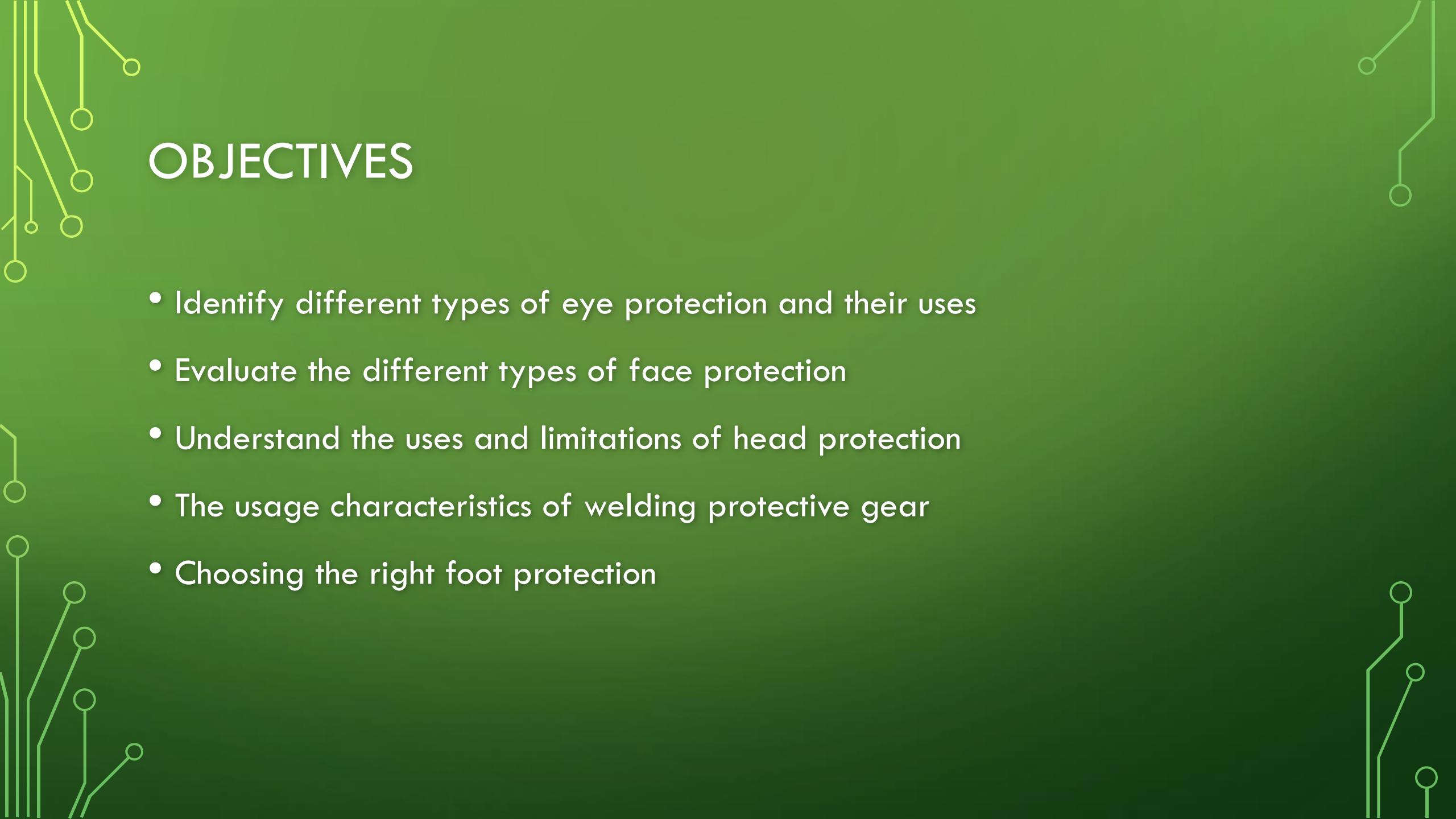
<http://www.osha.gov/Publications/osha3021.pdf>

- Compliance Assistance Specialists in the area offices
- National Institute for Occupational Safety and Health (NIOSH) – OSHA's sister agency
- OSHA Training Institute Education Centers
- Doctors, nurses, other health care providers
- Other local, community-based resources



# PERSONAL PROTECTIVE EQUIPMENT (PPE) IN CONFINED SPACES

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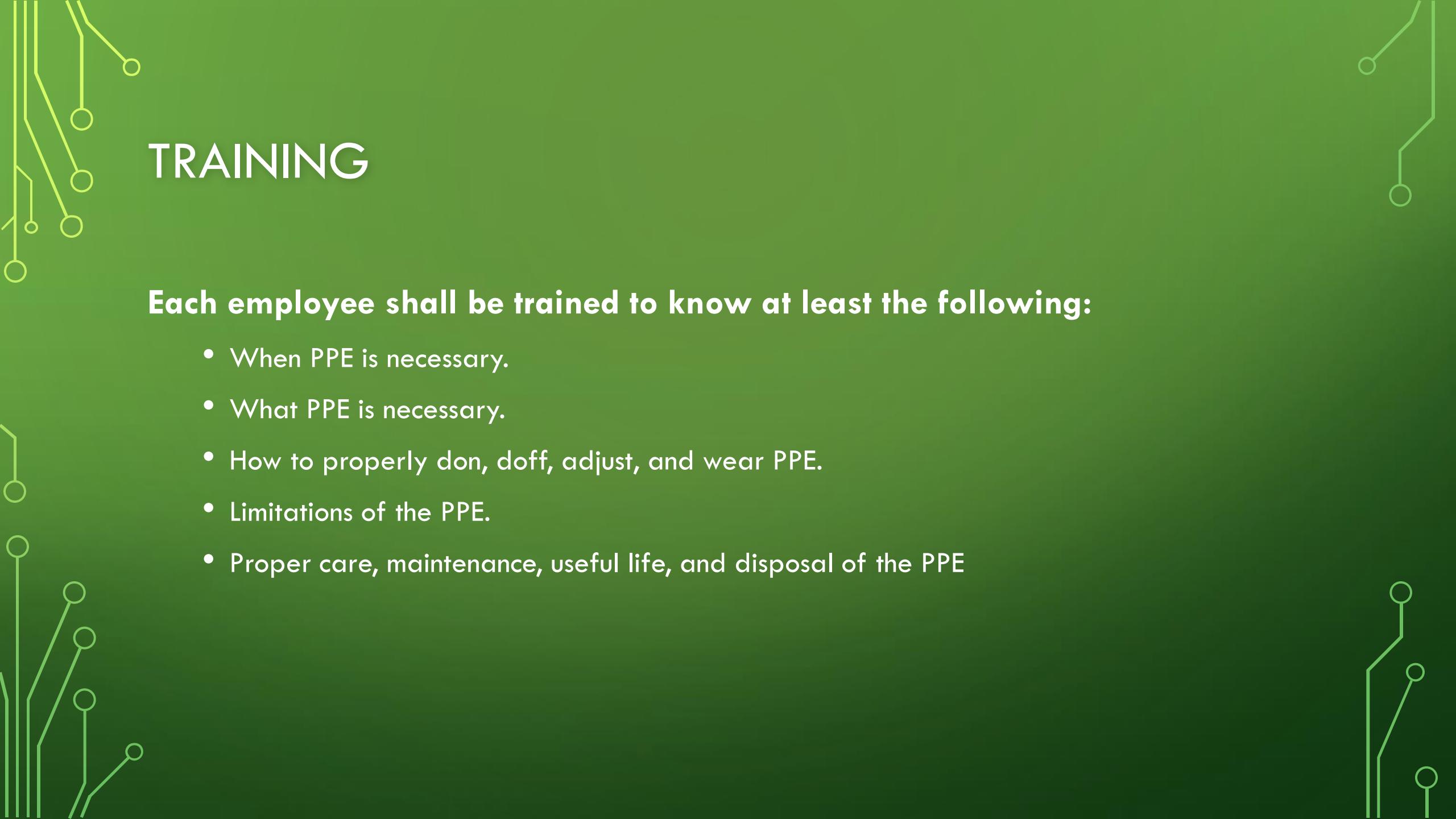


# OBJECTIVES

- Identify different types of eye protection and their uses
- Evaluate the different types of face protection
- Understand the uses and limitations of head protection
- The usage characteristics of welding protective gear
- Choosing the right foot protection

## OBJECTIVES CONTINUED

- Identifying the usage and limitations of various respirators
- Describe fit testing, medical evaluation, and their importance
- How to clean, care for, and store the respirator



# TRAINING

**Each employee shall be trained to know at least the following:**

- When PPE is necessary.
- What PPE is necessary.
- How to properly don, doff, adjust, and wear PPE.
- Limitations of the PPE.
- Proper care, maintenance, useful life, and disposal of the PPE



## THE FOLLOWING MINIMUM REQUIREMENTS MUST BE MET BY ALL PROTECTIVE DEVICES.

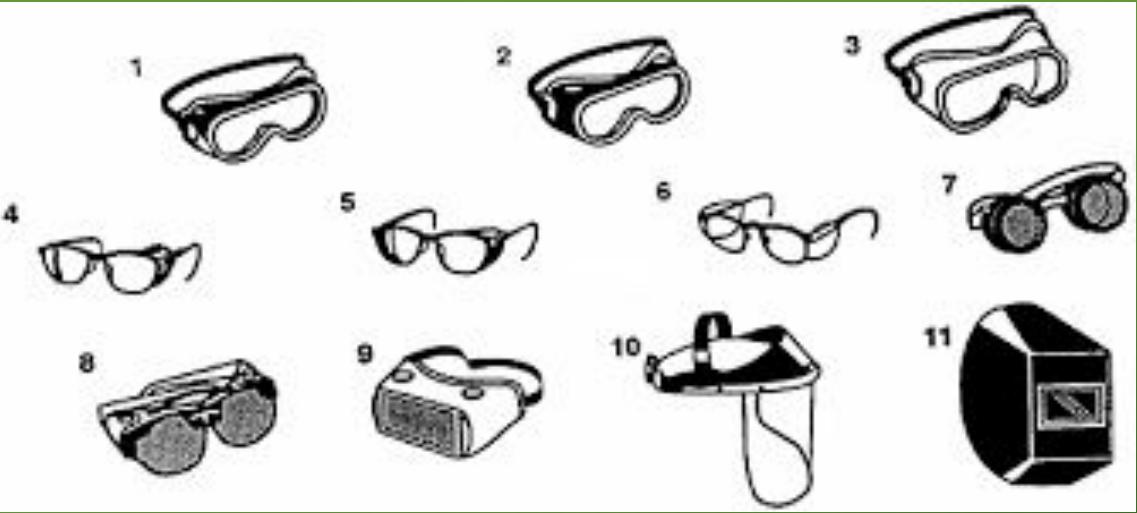
Protectors shall: Provide adequate protection against the particular hazards for which they are designed.

- Be of safe design and construction for the work to be performed.
- Be reasonably comfortable when worn under the designated conditions.
- Fit snugly and not unduly interfere with the movements of the wearer.
- Be durable.
- Be capable of being disinfected and cleaned if reusable.
- Be distinctly marked to facilitate identification only of the manufacturer

# HAZARD ASSESSMENT



Hazard Assessment		
Hazard type	Examples of Hazard	Common Related Tasks
<u>Impact</u>	Flying objects such as large chips, fragments, particles, sand, and dirt	Chipping, grinding, machining, masonry work, wood working, sawing, drilling, chiseling, powered fastening, riveting, and sanding
<u>Heat</u>	Anything emitting extreme heat	Furnace operations, pouring, casting, hot dipping, and welding
<u>Chemicals</u>	Splash, fumes, vapors, and irritating mists	Acid and chemical handling, degreasing, plating, and working with blood
<u>Dust</u>	Harmful dust	Woodworking, buffing, and general dusty conditions
<u>Optical Radiation</u>	Radiant energy, glare, and intense light	Welding, torch-cutting, brazing, soldering, and laser work



## EYE PROTECTION

SAFETY SPECTACLES ARE INTENDED TO SHIELD THE WEARER'S EYES FROM IMPACT HAZARDS SUCH AS FLYING FRAGMENTS, OBJECTS, LARGE CHIPS, AND PARTICLES. WORKERS ARE REQUIRED TO USE EYE SAFETY SPECTACLES WITH SIDE SHIELDS WHEN THERE IS A HAZARD FROM FLYING OBJECTS.

# SAFETY GLASSES



## CHARACTERISTICS

- Z87.1-2010, Z87.1-2003 or Z87.1-1989
- The lenses of safety spectacles are designed to resist moderate impact from flying objects and particles.
- Side shields provide angular protection from impact hazards *in addition* to frontal protection.

# SAFETY GOGGLES

## CHARACTERISTICS

- Z87.1-2010, Z87.1-2003 or Z87.1-1989
- Safety goggles lenses are designed and tested to resist moderate impact.
- Safety goggle frames must be properly fitted to the worker's face to form a protective seal around the eyes.



- Ventilated goggles allow air circulation while providing protection against airborne particles, dust, liquids, or light.

# INCORPORATING PRESCRIPTION INTO THE DESIGN OF PPE

WORKERS WHO WEAR PRESCRIPTION GLASSES MUST ALSO WEAR REQUIRED EYE PROTECTION

- Eye and face protection that fits comfortably over glasses is available.
- Safety goggles and spectacles may incorporate prescription lenses.

DUST AND CHEMICALS PRESENT ADDITIONAL HAZARDS TO CONTACTS WEARERS.

- OSHA recommends that workers have an extra pair of contacts or eyeglasses in case of contact failure or loss.

# FACE PROTECTION

FACE SHIELDS ARE INTENDED TO PROTECT THE ENTIRE FACE OR PORTIONS OF IT FROM IMPACT HAZARDS SUCH AS FLYING FRAGMENTS, OBJECTS, LARGE CHIPS, AND PARTICLES. WHEN WORN ALONE, FACE SHIELDS DO NOT PROTECT EMPLOYEES FROM IMPACT HAZARDS. USE FACE SHIELDS IN COMBINATION WITH SAFETY SPECTACLES OR GOGGLES, EVEN IN THE ABSENCE OF DUST OR POTENTIAL SPLASHES, FOR ADDITIONAL PROTECTION BEYOND THAT OFFERED BY SPECTACLES OR GOGGLES ALONE.

# FACE SHIELD



## CHARACTERISTICS

- Face shield windows extend from the brow to below the chin and across the entire width of the face.
- Headgear supports the window shield and secures the device to the head

## FACE SHIELD (CONTINUED)

- Face shield windows are made with different transparent materials and in varying degrees or levels of thickness. These levels should correspond with specific tasks



# HEAD PROTECTION

PROTECTING EMPLOYEES FROM POTENTIAL HEAD INJURIES IS A KEY ELEMENT OF ANY SAFETY PROGRAM. A HEAD INJURY CAN IMPAIR AN EMPLOYEE FOR LIFE OR IT CAN BE FATAL. WEARING A SAFETY HELMET OR HARD HAT IS ONE OF THE EASIEST WAYS TO PROTECT AN EMPLOYEE'S HEAD FROM INJURY.

# HEAD PROTECTION (CONTINUED)

PROTECTIVE HELMETS OR HARD HATS  
SHOULD DO THE FOLLOWING:

- Resist penetration.
- Absorb the shock of a blow.
- Protect against electrical shock
- Be water-resistant and slow burning.
- Have clear instructions explaining proper adjustment and replacement of the suspension and headband

CHARACTERISTICS

- ANSI Z89.1-2009, 2003 or 1997

# HEAD PROTECTION (CONT.)

## CLASS A

- Provide impact and penetration resistance along with limited voltage protection (up to 2,200 volts)
- Also known as class G or general purpose

## CLASS B

- Provide the highest level of protection against electrical hazards, with high-voltage shock and burn protection (up to 20,000 volts). They also provide protection from impact and penetration hazards by flying/falling objects
- Also known as class E or electrical

# HEAD PROTECTION (CONCLUSION)

## CLASS C

- Provide lightweight comfort and slight impact protection but offer no protection from electrical hazards.

## BUMP HAT

- Use in areas with low head clearance. They are recommended for areas where protection is needed from head bumps and lacerations
- These are not designed to protect against falling or flying objects and are not ANSI approved.

# WELDING PROTECTIVE GEAR



HEALTH HAZARDS FROM WELDING, CUTTING, AND BRAZING OPERATIONS INCLUDE EXPOSURES TO METAL FUMES AND TO ULTRAVIOLET (UV) RADIATION. SAFETY HAZARDS FROM THESE OPERATIONS INCLUDE BURNS, EYE DAMAGE, ELECTRICAL SHOCK, CUTS, AND CRUSHED TOES AND FINGERS.

# WELDING HELMETS

- Shield the face from sparks and hot debris
- Supports the window and secures the device to the worker's head.
- Welding helmets are heat and electricity insulated and flame resistant



# LENSES SHADE SCALE



**Table 1**  
**Filter Lenses for Protection Against Radiant Energy**

Operations	Electrode size in 1/32" (0.8mm)	Arc current	Minimum* protective shade
Shielded metal arc welding	< 3 3 - 5 5 - 8 > 8	< 60 60 - 160 160 - 250 250 - 550	7 8 10 11
Gas metal arc welding and flux cored arc welding		< 60 60 - 160 160 - 250 250 - 500	7 10 10 10
Gas tungsten arc welding		< 50 50 - 150 150 - 500	8 8 10
Air carbon	(light)	< 500	10
Arc cutting	(heavy)	500 - 1,000	11
Plasma arc welding		< 20 20 - 100 100 - 400 400 - 800	6 8 10 11
Plasma arc cutting	(light)** (medium)** (heavy)**	< 300 300 - 400 400 - 800	8 9 10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14

## SHADE SCALE (CONTINUED)



**Table 1 (continued)**  
**Filter Lenses for Protection Against Radiant Energy**

Operations	Plate thickness inches	Plate thickness mm	Minimum* protective shade
Gas welding: Light	< 1/8	< 3.2	4
Gas welding: Medium	1/8 - 1/2	3.2 - 12.7	5
Gas welding: Heavy	> 1/2	> 12.7	6
Oxygen cutting: Light	< 1	< 25	3
Oxygen cutting: Medium	1 - 6	25 - 150	4
Oxygen cutting: Heavy	> 6	> 150	5

# SHADE SCALE (CONCLUSION)

**Table 2**  
**Construction Industry Requirements for Filter Lens Shade Numbers for Protection Against Radiant Energy**

Welding Operation	Shade Number
Shielded metal-arc welding 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	10
Gas-shielded arc welding (nonferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	11
Gas-shielded arc welding (ferrous) 1/16-, 3/32-, 1/8-, 5/32-inch diameter electrodes	12
Shielded metal-arc welding 3/16-, 7/32-, 1/4-inch diameter electrodes	12
5/16-, 3/8-inch diameter electrodes	14
Atomic hydrogen welding	10 - 14
Carbon-arc welding	14
Soldering	2
Torch brazing	3 or 4
Light cutting, up to 1 inch	3 or 4
Medium cutting, 1 to 6 inches	4 or 5
Heavy cutting, more than 6 inches	5 or 6
Gas welding (light), up to 1/8-inch	4 or 5
Gas welding (medium), 1/8- to 1/2-inch	5 or 6
Gas welding (heavy), more than 1/2-inch	6 or 8

# WELDING PROTECTIVE GEAR (CONTINUED)

## GLOVES

- Leather
- Heat resistant
- The hands should be protected with leather gauntlet gloves



# WELDING PROTECTIVE GEAR (CONCLUSION)

## FOOT PROTECTION

- A pair of high top leather shoes, preferably safety shoes, is good protection for the feet. If low shoes are worn the ankles should be protected by fire resistant leggings
- Metatarsal guards

## SLEEVES

- Leather sleeves without cuffs in them are the preferred choice when welding
- The leather is fire resistant

# FOOT PROTECTION

EMPLOYEES WHO FACE POSSIBLE FOOT OR LEG INJURIES FROM FALLING OR ROLLING OBJECTS OR FROM CRUSHING OR PENETRATING MATERIALS SHOULD WEAR PROTECTIVE FOOTWEAR. ALSO, EMPLOYEES WHOSE WORK INVOLVES EXPOSURE TO HOT SUBSTANCES OR CORROSIVE OR POISONOUS MATERIALS MUST HAVE PROTECTIVE GEAR TO COVER EXPOSED BODY PARTS, INCLUDING LEGS AND FEET. IF AN EMPLOYEE'S FEET MAY BE EXPOSED TO ELECTRICAL HAZARDS, NON-CONDUCTIVE FOOTWEAR SHOULD BE WORN. ON THE OTHER HAND, WORKPLACE EXPOSURE TO STATIC ELECTRICITY MAY NECESSITATE THE USE OF CONDUCTIVE FOOTWEAR.

## FOOT PROTECTION (CONTINUED)

### STEEL TOES

- Z41-1999 or 1991

### SPECIAL PURPOSE

- Electrically conductive shoes- protect against build up of static electricity
- Electric hazard- nonconductive protect against completing a electrical circuit
- Foundry- insulated from extreme heat

## FOOT PROTECTION (CONCLUSION)

Examples of situations in which an employee should wear foot and/or leg protection include:

- When heavy objects such as barrels or tools might roll onto or fall on the employee's feet
- Working with sharp objects such as nails or spikes that could pierce the soles or uppers of ordinary shoes
- Exposure to molten metal that might splash on feet or legs
- Working on or around hot, wet or slippery surfaces
- Working when electrical hazards are present

# CARE OF PROTECTIVE FOOTWEAR

- As with all protective equipment, safety footwear should be inspected prior to each use.
- Shoes and leggings should be checked for wear and tear at reasonable intervals. This includes looking for cracks or holes, separation of materials, broken buckles or laces.
- The soles of shoes should be checked for pieces of metal or other embedded items that could present electrical or tripping hazards.
- Employees should follow the manufacturers' recommendations for cleaning and maintenance of protective footwear.

# GLOVES

THERE ARE MANY TYPES OF GLOVES AVAILABLE TODAY TO PROTECT AGAINST A WIDE VARIETY OF HAZARDS. THE NATURE OF THE HAZARD AND THE OPERATION INVOLVED WILL AFFECT THE SELECTION OF GLOVES.

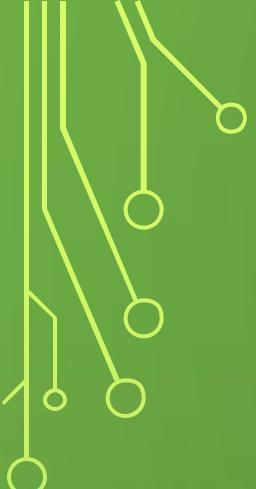
# GLOVES (CONTINUED)

The following are examples of some factors that may influence the selection of protective gloves for a workplace:

- Type of chemicals handled.
- Nature of contact (total immersion, splash, etc.).
- Duration of contact.
- Area requiring protection (hand only, forearm, arm).
- Grip requirements (dry, wet, oily).
- Thermal protection.
- Size and comfort.
- Abrasion/resistance requirements.

Gloves made from a wide variety of materials are designed for many types of workplace hazards. In general, gloves fall into four groups:

- Gloves made of leather, canvas or metal mesh
- Fabric and coated fabric gloves
- Chemical- and liquid-resistant gloves
- Insulating rubber gloves

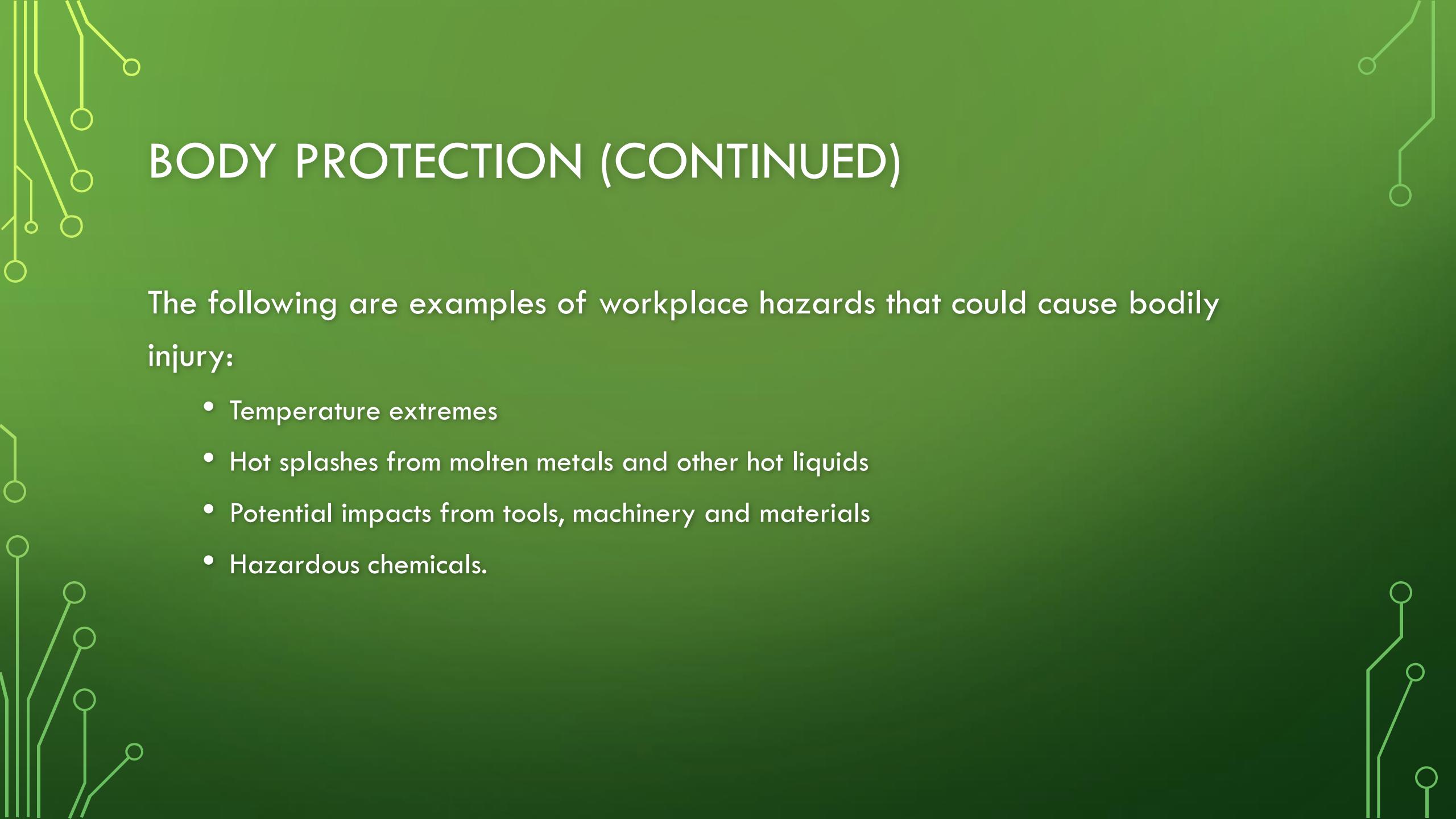


## CARE OF GLOVES

- Protective gloves should be inspected before each use to ensure that they are not torn, punctured or made ineffective in any way.
  - A visual inspection will help detect cuts or tears but a more thorough inspection by filling the gloves with water and tightly rolling the cuff towards the fingers will help reveal any pinhole leaks.
  - Gloves that are discolored or stiff may also indicate deficiencies caused by excessive use or degradation from chemical exposure.
- 
- 

## BODY PROTECTION

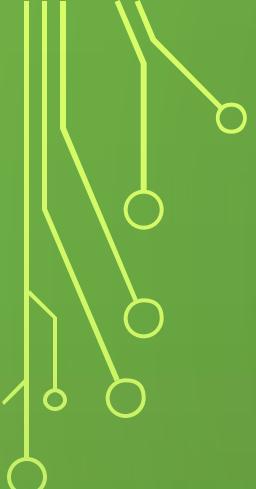
EMPLOYEES WHO FACE POSSIBLE BODILY INJURY OF ANY KIND THAT CANNOT BE ELIMINATED THROUGH ENGINEERING, WORK PRACTICE OR ADMINISTRATIVE CONTROLS, MUST WEAR APPROPRIATE BODY PROTECTION WHILE PERFORMING THEIR JOBS



## BODY PROTECTION (CONTINUED)

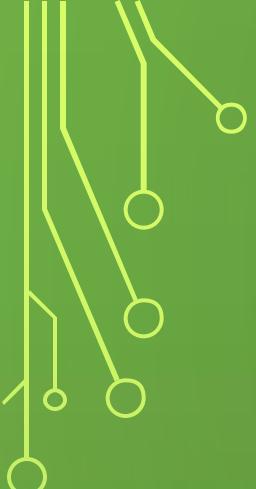
The following are examples of workplace hazards that could cause bodily injury:

- Temperature extremes
- Hot splashes from molten metals and other hot liquids
- Potential impacts from tools, machinery and materials
- Hazardous chemicals.



PROTECTIVE CLOTHING COMES IN A VARIETY OF MATERIALS, EACH EFFECTIVE AGAINST PARTICULAR HAZARDS, SUCH AS:

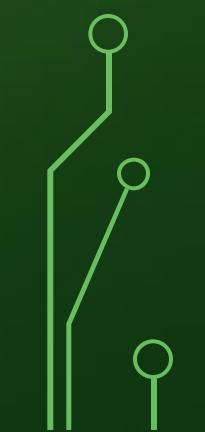
- **Paper-like fiber-** used for disposable suits provide protection against dust and splashes.
  - **Treated wool and cotton** adapts well to changing temperatures, is comfortable, and fire-resistant and protects against dust, abrasions and rough and irritating surfaces.
  - **Duck** is a closely woven cotton fabric that protects against cuts and bruises when handling heavy, sharp or rough materials.
- 
- 



## PROTECTIVE CLOTHING COMES IN A VARIETY OF MATERIALS, EACH EFFECTIVE AGAINST PARTICULAR HAZARDS, SUCH AS: CONTINUED

- **Leather** is often used to protect against dry heat and flames.
- **Rubber, rubberized fabrics, neoprene and plastics** protect against certain chemicals and physical hazards.

When chemical or physical hazards are present, check with the clothing manufacturer to ensure that the material selected will provide protection against the specific hazard.



# HEARING PROTECTION

## HEARING PROTECTION (CONTINUED)

Employee exposure to excessive noise depends upon a number of factors, including:

- The loudness of the noise as measured in decibels (dB).
- The duration of each employee's exposure to the noise.
- Whether employees move between work areas with different noise levels.
- Whether noise is generated from one or multiple sources.

## HEARING PROTECTION (CONCLUSION)

Generally, the louder the noise, the shorter the exposure time before hearing protection is required. For instance, employees may be exposed to a noise level of 90 dB for 8 hours per day



# TYPES OF HEARING PROTECTION

- **Single-use earplugs** are made of waxed cotton, foam, silicone rubber or fiberglass wool. They are self-forming and, when properly inserted, they work as well as most molded earplugs.
- **Pre-formed or molded earplugs** must be individually fitted by a professional and can be disposable or reusable. Reusable plugs should be cleaned after each use.
- **Earmuffs** require a perfect seal around the ear. Glasses, facial hair, long hair or facial movements such as chewing may reduce the protective value of earmuffs.

# PERMISSIBLE NOISE EXPOSURE

Duration per day, in hours	Sound in dB
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
.5	110
.25 or less	115

# RESPIRATORS

AN ESTIMATED 5 MILLION WORKERS ARE REQUIRED TO WEAR RESPIRATORS IN 1.3 MILLION WORKPLACES THROUGHOUT THE UNITED STATES. RESPIRATORS PROTECT WORKERS AGAINST INSUFFICIENT OXYGEN ENVIRONMENTS, HARMFUL DUSTS, FOGS, SMOKES, MISTS, GASES, VAPORS, AND SPRAYS. THESE HAZARDS MAY CAUSE CANCER, LUNG IMPAIRMENT, DISEASES, OR DEATH.

# RESPIRATOR TYPES

View Video: [https://youtu.be/u\\_Dovk\\_khLw](https://youtu.be/u_Dovk_khLw)

# TWO BASIC TYPES OF RESPIRATORS

## AIR SUPPLIED

Protect by supplying clean, breathable air from another source. Respirators that fall into this category include:

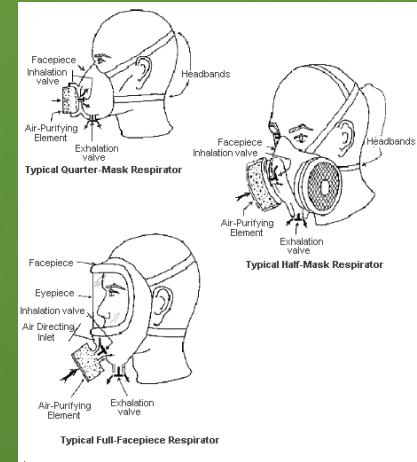
- airline respirators, which use compressed air from a remote source
- self-contained breathing apparatus (SCBA), which include their own air supply.



## AIR PURIFYING

Removal of contaminants from the air. Respirators of this type include particulate respirators, which filter out airborne particles, and air-purifying respirators with cartridges/canisters which filter out chemicals and gases

- Cannot be used in oxygen deficient atmospheres



# TYPES OF RESPIRATORS

## PARTICULATE RESPIRATORS

- Filter out dusts, fumes and mists.
- Are usually disposable dust masks or respirators with disposable filters.
- Must be replaced when they become discolored, damaged, or clogged.
- Examples: filtering face piece or elastomeric respirator.
- Intended only for low hazard levels.

## CHEMICAL CARTRIDGE/GAS MASK RESPIRATOR

- Uses replaceable chemical cartridges or canisters to remove the contaminant.
- Are color-coded to help you select the right one.
- May require more than one cartridge to protect against multiple hazards

# COLOR CODE OF FILTER RESPIRATOR CARTAGES

<b>Contaminant</b>	<b>Color Coding on Cartridge/Canister</b>
Acid gases	White
Hydrocyanic acid gas	White with 1/2 inch green stripe completely around the canister near the bottom.
Chlorine gas	White with 1/2 inch yellow stripe completely around the canister near the bottom.
Organic vapors	Black
Ammonia gas	Green
Acid gases and ammonia gas	Green with 1/2 inch white stripe completely around the canister near the bottom.
Carbon monoxide	Blue
Acid gases & organic vapors	Yellow
Hydrocyanic acid gas and chloropicrin vapor	Yellow with 1/2 inch blue stripe completely around the canister near the bottom.
Acid gases, organic vapors, and ammonia gases	Brown
Radioactive materials, except tritium & noble gases	Purple (magenta)

## TYPES OF RESPIRATORS (CONTINUED)

### ***POWERED AIR-PURIFYING RESPIRATOR (PAPR):***

- Use a fan to draw air through the filter to the user.

### ***SELF-CONTAINED BREATHING APPARATUS (SCBA)***

- Provide clean air from a portable air tank when the air around you is simply too dangerous to breathe
- Weighs 30 lbs. or more
- Half hour breathing time

# MAINTENANCE AND CARE OF RESPIRATORS

## View Video

- [https://www.osha.gov/video/respiratory\\_protection/maintenance.html](https://www.osha.gov/video/respiratory_protection/maintenance.html)
- Source: <https://youtu.be/CnF05owDxTl>

# MEDICAL EVALUATIONS

**Employees need to be medically cleared to wear respirators before commencing use. All respirators generally place a burden on the employee.**

- Negative pressure respirators restrict breathing, some respirators can cause claustrophobia
- Self-contained breathing apparatuses are heavy

A physician or other licensed health care professional operating within the scope of his/her practice needs to medically evaluate employees to determine under what conditions they can safely wear respirators.

# FIT TESTING

All respirators that rely on a mask-to-face seal need to be annually checked with either qualitative or quantitative methods to determine whether the mask provides an acceptable fit to a wearer

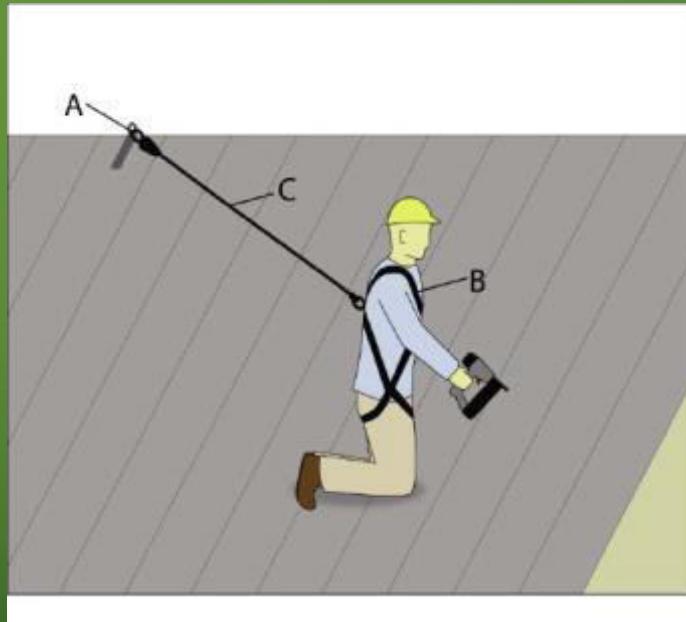
- qualitative fit test procedures rely on a subjective sensation (taste, irritation, smell) of the respirator wearer to a particular test agent
- quantitative fit test uses measuring instruments to measure face seal leakage.

# FALL PROTECTION

*TO MAINTAIN THEIR SERVICE LIFE AND HIGH PERFORMANCE, ALL BELTS AND HARNESSSES SHOULD BE INSPECTED FREQUENTLY. VISUAL INSPECTION BEFORE EACH USE SHOULD BECOME ROUTINE, AND ALSO A ROUTINE INSPECTION BY A COMPETENT PERSON.*

# PERSONAL FALL ARREST SYSTEMS (PFAS)

- A PFAS consists of the following components:
  - Anchorage Point
  - Body Harness
  - Connector



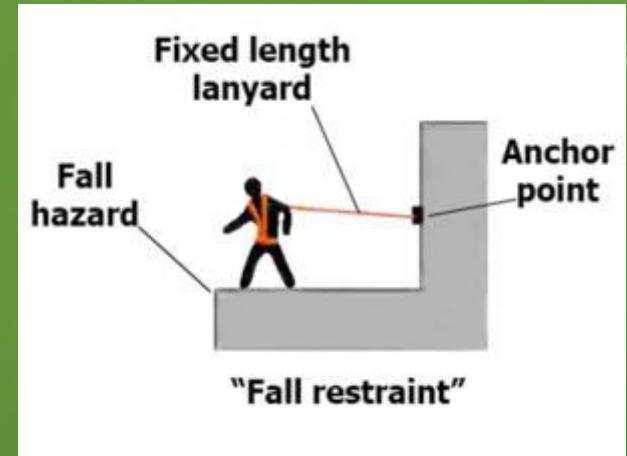
$$A + B + C = \text{PFAS}$$



# ANCHORAGES

Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least **5,000** pounds (22.2 kn.) per employee attached

# PERSONAL FALL ARREST SYSTEM



## FULL BODY HARNESS

- A body harness is defined by OSHA as: "straps which may be secured about the employee in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system"

## CONNECTING DEVICE

- Carabiners
- Buckles
- Dee-rings
- Snap-hooks
- Lanyards
- Winches

Connects the body harness to the anchor point



# RETRIEVAL

- In the event of emergency having a system in place to remove occupant from confined space examples:



## Lifeline

- Designed to make non entry rescue possible
  - Difficult to pull person out in vertical confined spaces



## Winch

- Designed to assist with the removal of personnel from the confined space
- Makes it possible for single person to pull another out
- Mechanical advantage
  - Dangers are if the incapacitated person becomes tangled on a fixed object can cause damage to the person

# VENTILATION

## MECHANICAL VENTILATION

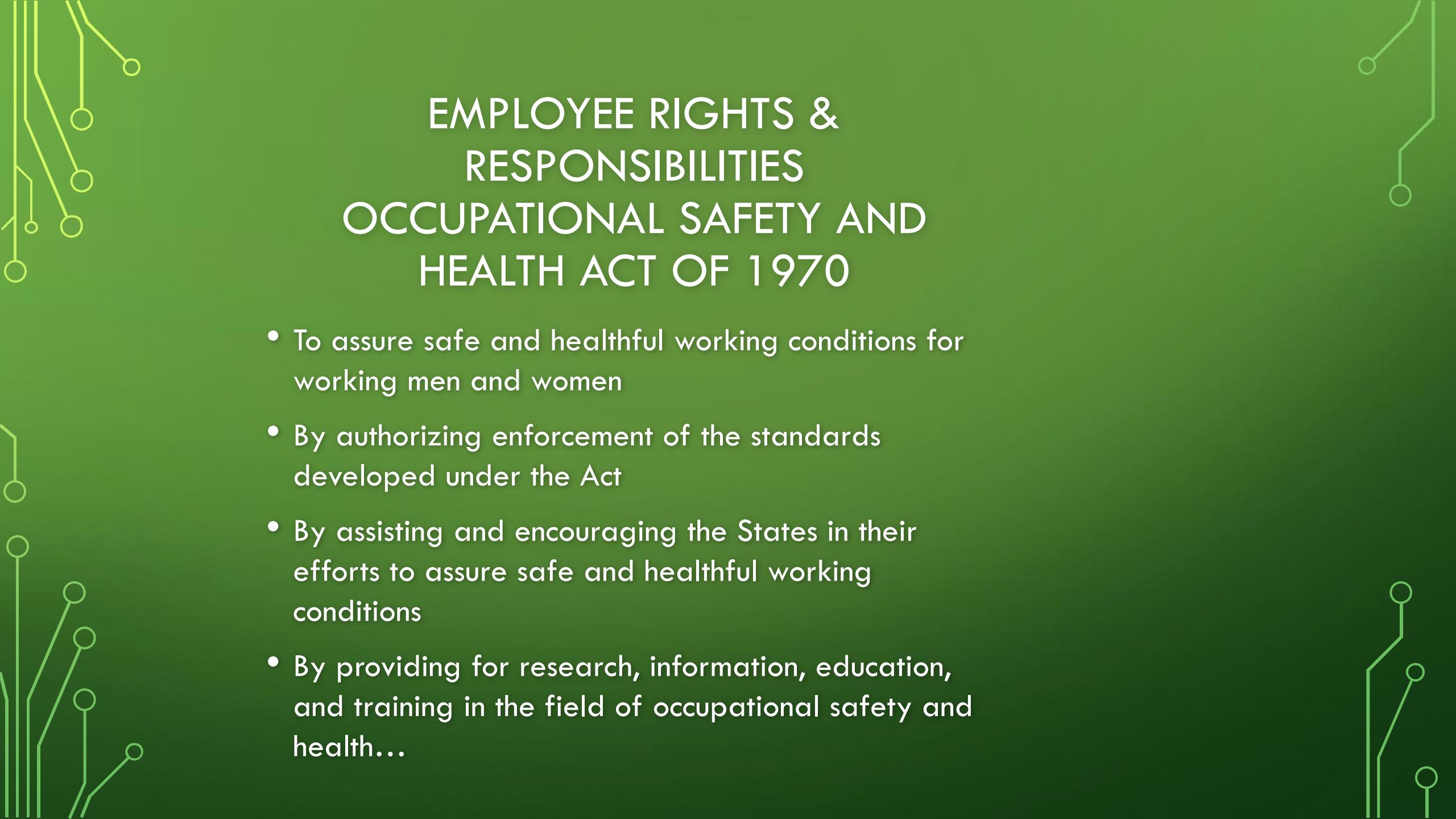
- A fan with hose attached to either push a new atmosphere in or pull a hazardous atmosphere out.



# IMPROPER VENTILATION DEATH

View Video: <https://youtu.be/gMKuzopg5wc>

# EMPLOYEE RIGHTS AND RESPONSIBILITIES



# EMPLOYEE RIGHTS & RESPONSIBILITIES OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970

- To assure safe and healthful working conditions for working men and women
- By authorizing enforcement of the standards developed under the Act
- By assisting and encouraging the States in their efforts to assure safe and healthful working conditions
- By providing for research, information, education, and training in the field of occupational safety and health...



# EMPLOYEE RIGHTS & RESPONSIBILITIES

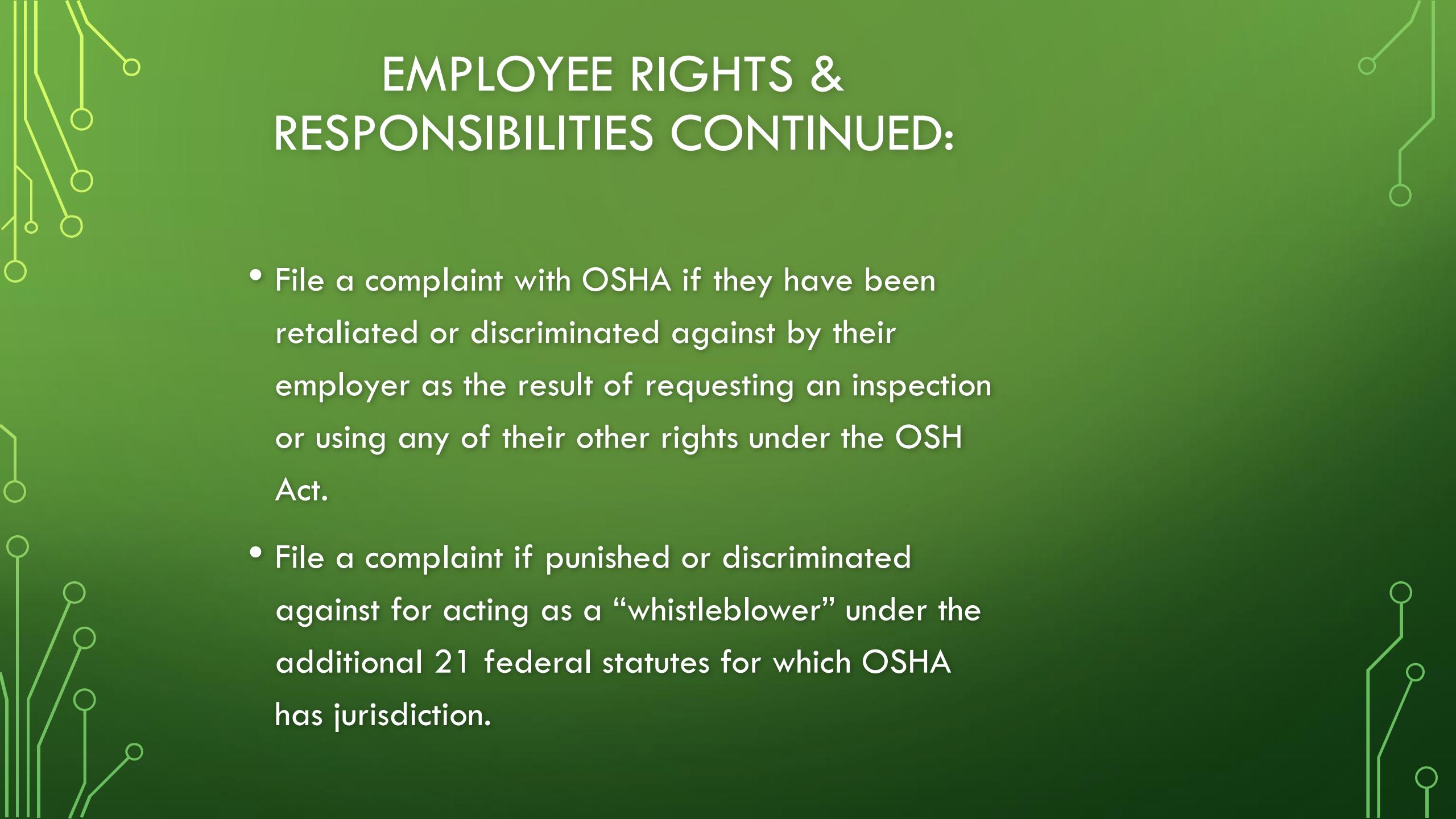
- You have the right to:
  - A safe and healthful workplace
  - Know about hazardous chemicals
  - Information about injuries and illnesses in your workplace
  - Complain or request hazard correction from employer



# EMPLOYEE RIGHTS & RESPONSIBILITIES

## ***YOU HAVE THE RIGHT TO:***

- File a confidential complaint with OSHA to have their workplace inspected.
- Receive information and training about hazards, methods to prevent harm, and the OSHA standards that apply to their workplace. The training must be done in a language and vocabulary workers can understand.
- Get copies of their workplace medical records and exposure records.
- Participate in an OSHA inspection and speak in private with the inspector.



## EMPLOYEE RIGHTS & RESPONSIBILITIES CONTINUED:

- File a complaint with OSHA if they have been retaliated or discriminated against by their employer as the result of requesting an inspection or using any of their other rights under the OSH Act.
- File a complaint if punished or discriminated against for acting as a “whistleblower” under the additional 21 federal statutes for which OSHA has jurisdiction.

# WHISTLEBLOWER PROTECTION

OSHA's Whistleblower Protection Program enforces the whistleblower provisions of more than twenty whistleblower statutes protecting employees who report violations of various workplace safety and health, airline, commercial motor carrier, consumer product, environmental, financial reform, food safety, health insurance reform, motor vehicle safety, nuclear, pipeline, public transportation agency, railroad, maritime, and securities laws. Rights afforded by these whistleblower protection laws include, but are not limited to, worker participation in safety and health activities, reporting a work-related injury, illness or fatality, or reporting a violation of the statutes herein.

# WHISTLEBLOWER PROTECTION (CONTINUED)

The screenshot shows the homepage of the United States Department of Labor's Occupational Safety and Health Administration (OSHA) website. The top navigation bar is red and features the U.S. Department of Labor logo, a search bar, and links to 'A to Z Index', 'En Español', 'Contact Us', 'FAQs', and 'About OSHA'. Below this, the OSHA logo is displayed, along with social media sharing icons and links to 'OSH QuickTakes Newsletter' and 'RSS Feeds'. The main content area has a white header with 'OSHA' and 'Occupational Safety & Health Administration' on the left, and 'We Can Help' and 'What's New | Offices OSHA' on the right. A horizontal menu bar below the header includes links for 'Home', 'Workers', 'Regulations', 'Enforcement', 'Data & Statistics', 'Training', 'Publications', 'Newsroom', 'Small Business', and 'Anti-Retaliation'. A secondary menu bar below the first one includes 'Home', 'File a Complaint', 'Fact Sheets & Statistics', 'News & Updates', 'Statutes', 'Regulations & Directives', 'Advisory Committee', 'Contacts & Links', and 'En español'. The main content area features a large blue banner with the text 'THE WHISTLEBLOWER Protection Programs'. To the right of the banner is a grid of six smaller images: a worker on a roof, a worker at a desk, an airplane, a factory floor, a tray of muffins, and a woman smiling.

# EMPLOYEE RIGHTS & RESPONSIBILITIES (CONTINUED)

## Workers Rights:

<http://www.osha.gov/Publications/osha3021.pdf>

- Compliance Assistance Specialists in the area offices
- National Institute for Occupational Safety and Health (NIOSH) – OSHA's sister agency
- OSHA Training Institute Education Centers
- Doctors, nurses, other health care providers
- Other local, community-based resources

# Construction Safety & Injury Prevention Program

“This material was produced under grant SH29640SH6 from the Occupational Safety and Health Administration, U.S. Department of Labor. It does not necessarily reflect the views or policies of the U.S. Department of Labor, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government.”

# Overview

Structure



Introduction



OSHA  
Considerations



# CSIP Structure

Targeted Training

## Participants

**Workers**

**Safety Manager/Coordinator**

**Supervisory & Managerial Staff**

# CSIP Structure

## Worker

### Module 1

- Hazard Identification Plan
- Hazard Control
- Personal Protective Equipment
- PPE Assessment Development
- Employer Responsibilities & Disciplinary Policy
- Worker Rights and Anti-Retaliation

# CSIP Structure

## Safety Manager/Coordinator

### Module 1

- Leadership Commitment to Operational Safety
- Workplace Safety & Employee Engagement
- Hazard Identification Plan
- Workplace Safety Rules & Hazard Control

### Module 2

- Safety Inspection Procedure
- Incident Investigation Procedure
- OSHA Inspections
- Emergency Planning & Emergency Response Procedures

# CSIP Structure

Manager & Supervisory Staff

## Module 1

- Employee Engagement
- Hazard Identification Plan
- Hazard Control
- Workplace Safety Rules
- Job Safety Analysis
- OSHA Inspections
- Emergency Planning & Emergency Response Procedures
- Employer Responsibilities & Disciplinary Policy
- Anti-retaliation

# OSHA & Rules

**Employers are required to have a safety and health program that will protect their employees.**

**“Protect” meaning preventing injury and illness.**

# CSIP Introduction

**What is the Construction Safety Program?**

**Who says I have to do it?**

**How can it be done?**

**How do I know what I'm getting?**

# CSIP Introduction

## Program Support

**Susan Harwood Training Program** grants support training and education programs for workers and employers on the recognition, avoidance, abatement, and prevention of safety and health hazards in their workplaces through ([Source](#))

The goal of CSP is to address prevention and identification of construction safety and health hazards to “**secure safe and healthy workplaces**, particularly in high-risk industries” (DOL’s Strategic Objective, Performance Goal OSHA 2.1).

# CSIP Introduction

A program is a combination of activities that are designed to ensure safe and healthful workplaces for employees. A program will include equipment, materials, money, personnel and time. Do it smartly!

Failure to develop and implement an effective program affects costs, and liability.

# Rules

**Complying with the standards and rules will help employers to meet this duty.**

**Employers must identify, evaluate and control hazards that can injure employees**

# Common Questions

## Why is OSHA inspecting me?

- Because they are required to do so by law.

I've been in business for several years and no one told me about OSHA, this is not fair?

- Ignorance of the law is not a defense or an excuse.

The compliance officers are not consistent.  
The other guys did not cite me for this.

- They are not required to be. An inspection is only a snapshot in time.

# Common Questions

**No one in OSHA considers the cost of doing business and how much it costs to survive.**

- It is not their job to figure out your business. You have the control to do whatever is reasonable and necessary to protect your workers. Performance standards relies on how you apply the standards and implement procedures and processes to protect your workers. Your workers are your resource.

# Common Questions

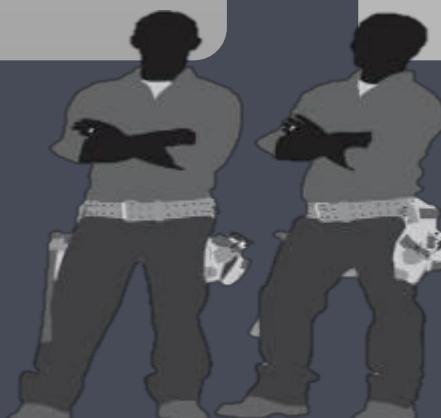
## What If I Don't?

As with any other law employers will be cited and fined. Penalties are assessed.

Once you violate the law employers can be found to be negligent and liable.

If you violate the law you are negligent and if someone is hurt you can be liable.

If cited – this means that the law was violated and employees were placed in danger.



# OSHA

## Purpose of OSHA

Exists because until 1970, no uniform or comprehensive provisions existed to protect against workplace safety and health hazards.

### Mission:

**1.**  
**To Save Lives**

**2.**  
**To Prevent Injury**

**3.**  
**To Protect America's Workers**

# OSHA

## OSHA Facts

In 2015, there were 4,836 fatal work injuries, 21 percent of which were related to the construction industry. This averages to 93 fatalities a week or more than 13 daily.

In 2015, 2.9 million non-fatal work-related injuries and illnesses were reported by private industries and 752,600 work-related injuries and illnesses were related by public industries.

# OSHA

## OSHA Strategies

To Help Reduce Injury and Death on the Job

1.

Strong, fair  
& effective  
enforcement

2.

Outreach,  
education &  
compliance  
assistance

3.

Partnerships &  
other  
cooperative  
programs

# Intended Outcome



We hope that CSIP will provide you with the tools and resources to address safety at your workplace

# Disciplinary Policy & Employer Responsibilities



# Overview

## Disciplinary Policy



## Employer Responsibilities



## Record- Keeping



# Disciplinary Policy

## Implementing Safe Work Practices

**Supervisors should receive training on the company's safety and health policies, guidelines, and procedures established for day-to-day operations.**

- They need a clear understanding of their responsibilities and company policies and procedures for disciplining employees (i.e. progressive disciplinary action).
- They must be involved in addressing safety performance issues and taking disciplinary action when safety policy is not followed.

# Disciplinary Policy

Implementing Safe Work Practices

Employer Responsibilities



A disciplinary policy should be incorporated into your company's policies and procedures.



It is important to inform all employees about this policy upon hiring.

# Disciplinary Policy

Implementing Safe Work Practices

## Employer Responsibilities

**Frequent reminders about the policy and consequences of working in an unsafe manner should also be communicated.**

- This can be achieved a number of ways including: safety orientations, employee handbooks, written procedures, meetings, etc.

**It is important that the program be very clear so there are no inconsistencies when the program is used.**

# Disciplinary Policy

Implementing Safe Work Practices

## Employee Expectations

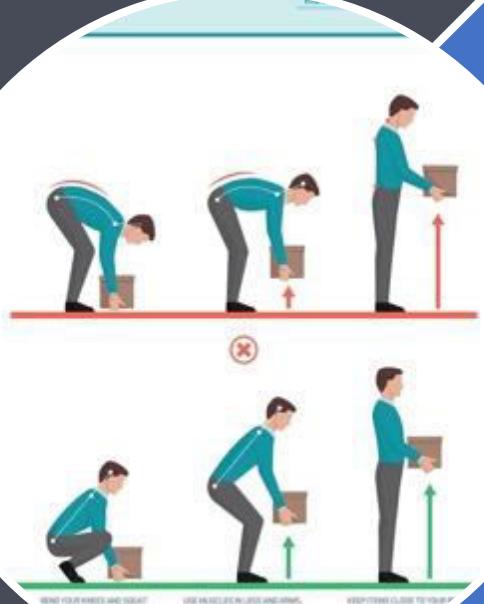


To be notified, by employer, of disciplinary policy at new hire orientation and questions to be answered.

# Disciplinary Policy

## Implementing Safe Work Practices

### Keep It Separate



Your company may have a behavior-based safety program, or similar, for educating employees about unsafe acts. It is important to keep these types of programs separate from your Disciplinary Program. For example:

- Behavior-based Safety Program: a supervisor may talk with an employee who is not wearing safety glasses about the hazards involved with the unsafe act (not wearing eye protection).
- Disciplinary Policy action: a written warning for a second infraction.

# Disciplinary Policy

## Implementing Safe Work Practices

### Keep It Separate

The goal should be to address behavior by ensuring that the employee understands what hazards are present and the consequences of working in an unsafe manner.

Implementing discipline should only be a consequence of an employee becoming a repeat offender or insubordination.

# Disciplinary Policy

## Progressive Discipline

Discipline becomes progressively harsher until it leads to termination.

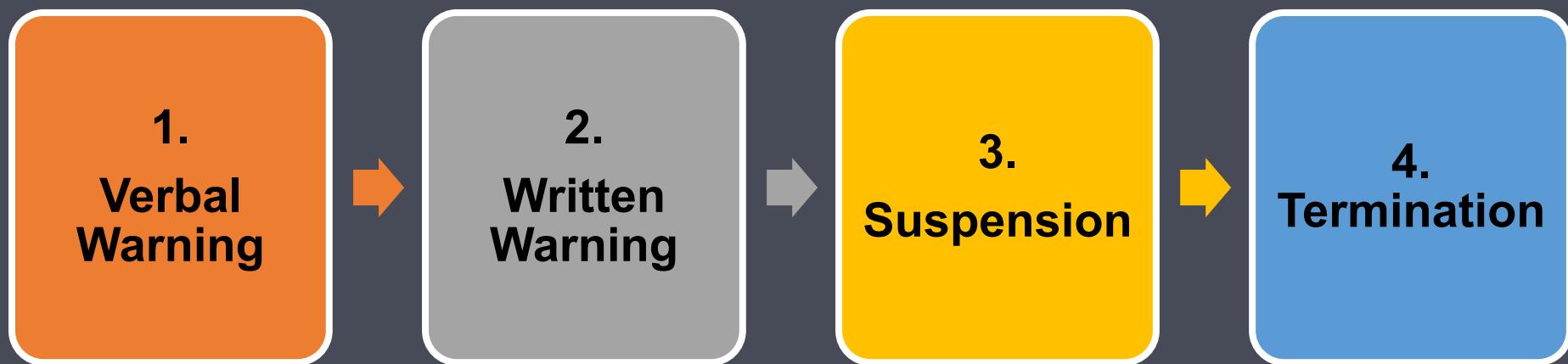
# RULES

**“Inviolable rules” may be grounds for immediate discipline or termination based on the severity.**

**An inviolable rule may include violations of fall protection, lock out / tag out, trench and excavation, or insubordination.**

# Disciplinary Policy

Progressive Discipline



# Disciplinary Policy

## Progressive Discipline

### Responsibility & Expectations

#### Policy

- The Disciplinary Policy should be designed to provide a structured corrective action process, designed to identify and correct undesirable behavior. The progressive corrective action may skip steps, depending on the nature of the offense, but will be implemented consistently among all staff.

# Disciplinary Policy

## Progressive Discipline

### Procedure

#### 1. Verbal Warning & Counseling

- Supervisor should schedule a meeting with the employee to discuss improper conduct.
- Within a given timeframe (i.e. 5 business days), the supervisor will document, in writing, the meeting. Employee will sign to demonstrate understanding of the issues and the corrective action.



# Disciplinary Policy

## Progressive Discipline

### Procedure

#### 2. Written Warning

- Supervisor and a manager should schedule a meeting with the employee to 1) review prior relevant conduct and corrective action; and 2) inform the employee of the consequences of their continued failure to meet conduct expectations.
- A formal plan to improve employee's performance should be issued in a given timeframe (i.e. 5 business days) and be signed by the employee.
- The employee should be informed that continued misconduct and failure to immediately implement corrective action plan, will result in additional discipline, up to termination

# Disciplinary Policy

## Progressive Discipline

### Procedure

#### 3. Suspension

- For some incidences, the most appropriate action is the temporary removal of the employee.
- An investigation should be conducted.
- Employers must consider wage laws in determining whether the suspension includes pay.

# Disciplinary Policy

## Progressive Discipline

### Procedure

#### 4. Termination

- Employers should implement progressive discipline and associated corrective action.
- Depending on the nature of the misconduct, employees may be terminated without prior notice and disciplinary action.

# Disciplinary Policy

Progressive Discipline

## Document, Document, Document

- Documentation of employee discipline is critical. Document all corrective action (including verbal warnings) by placing a note in the employee's personnel file.
- Maintain a confidential log of disciplinary actions for all employees. A log would easily allow a supervisor to determine which level of discipline is appropriate based on previous infractions.

# Disciplinary Policy

## Progressive Discipline

Document, Document, Document, *cont'd*

- This log can be used to defend against an OSHA citation if discipline has been enforced in a firm, fair and consistent manner.
- Be sure to document what corrective action was taken (i.e. terminated, sent home for the day without pay, verbal warning) and have employee sign.



# Disciplinary Policy

Clear Communication



**Clearly explain the reason(s) for the disciplinary action.**

- Inform the employee of the corrective action to be implemented for subsequent violations.**
- If possible, have a witness to discipline. All in attendance should sign the disciplinary notice.**

# Disciplinary Policy

## Applying Discipline

### Employer Considerations

**Before discipline is applied, a supervisor should ask themselves the following questions:**

- Did I clearly define what was expected?
- Was the employee aware of disciplinary program/ inviolable rule?
- Did I perform the necessary training/retraining?
- Would others be held to the same standard?

# Disciplinary Policy

## Applying Discipline

### Employer Considerations

If a supervisor can answer yes to these questions, it would appear that discipline is appropriate.



The goal of a Disciplinary Program is not to terminate. A Disciplinary Program is one injuries are prevented, safe practices are obeyed, and all employees are safe from harm



# Questions?



# OSHA Recordkeeping Requirements



# Recordkeeping

## OSHA Recordkeeping Requirements 29 CFR 1904

**OSHA's reporting and recordkeeping regulations require employers to:**

**Maintain records in each establishment of occupational injuries and illnesses as they occur, and make those records accessible to employees.**

# Recordkeeping

## OSHA Recordkeeping Requirements 29 CFR 1904

Keep injury and illness records and post from February 1 through April 30 an annual summary of occupational injuries and illnesses for each establishment.

A company executive must certify the accuracy of the summary.

# Recordkeeping

## Employer Requirements

- Record any fatality regardless of the length of time between the injury and the death.
- Provide, upon request, pertinent injury and illness records for inspection and copying by any representative of the Secretaries of Labor or HHS, or the state during any investigation, research, or statistical compilation.
- Comply with any additional recordkeeping and reporting requirements in specific OSHA standards.

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Wr200log.fp5

OSHA 300...

OSHA's Form 300

## Log of Work-Related Injuries and Illnesses

You must record information about every work-related death and about every work-related injury or illness that involves loss of consciousness, restricted work activity or job transfer, days away from work, or medical treatment beyond first aid. You must record significant work-related injuries and illnesses that are diagnosed by a physician or licensed health care professional. You must also record work-related injuries or illness that meet any of the specific recording criteria listed in 29 CFR Part 1904.12. Feel free to use two lines for a single case if you need to. You must complete an Injury and Illness Incident Report (OSHA Form 301) or equivalent form for each injury or illness recorded on this form. If you're not sure whether a case is recordable, call your local OSHA office for help.

**Attention:** This form contains information relating to employee health and must be used in a manner that protects the confidentiality of employees to the extent possible while the information is being used for occupational safety and health purposes.

Year 2001  
U.S. Department of Labor  
Occupational Safety And Health Administration

Form approved OMB No. 1218-0115

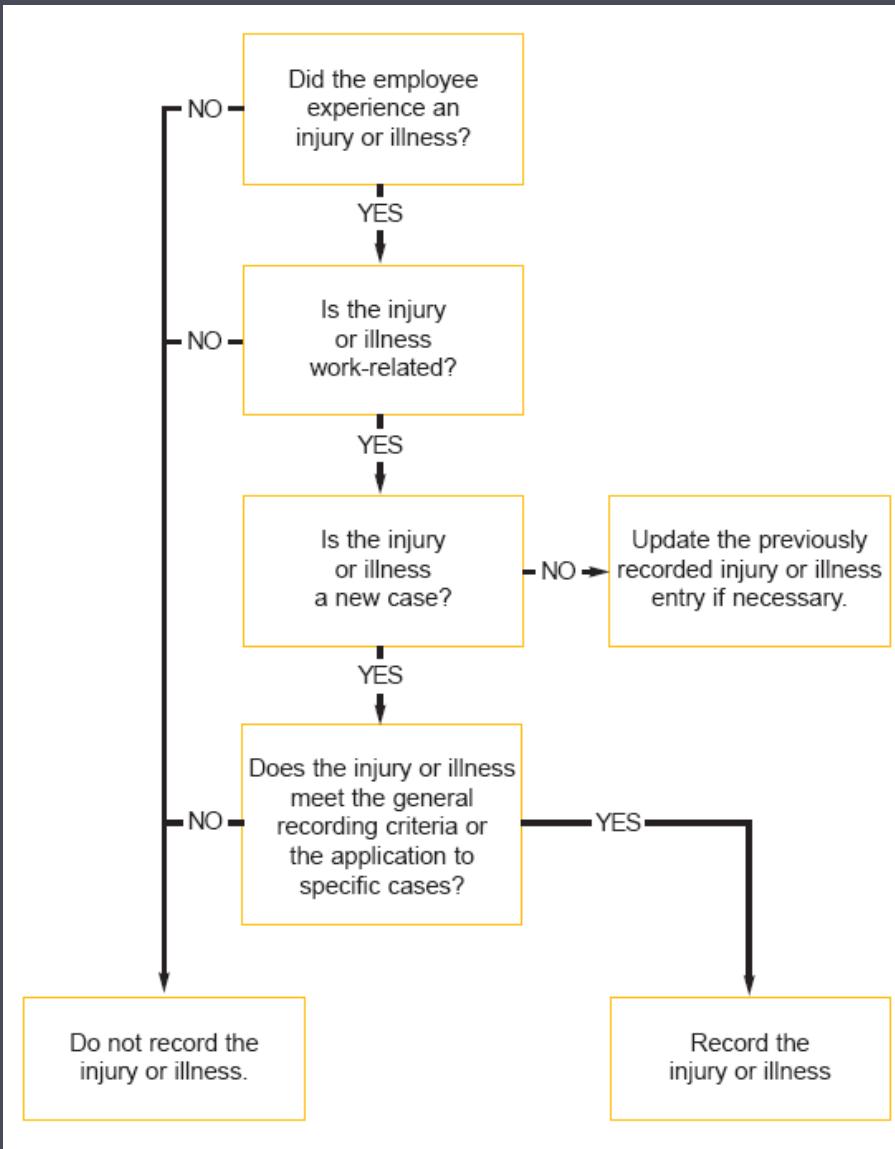
Identify the person		Describe the case			Classify the case				
(A) Case no.	(B) Employee's name	(C) Job title (e.g., Welder)	(D) Date of Injury or onset of illness	(E) Where the event occurred (e.g., welding deck math way)	(F) Describe injury or illness, parts of body affected, and object/s substance that directly injured or made person ill. (e.g., Second degree burn on right forearm from acetylene torch)	Using these four categories, check ONLY the most serious result for each case:  Death      Days away from work      Remained at work Job transferred or location      Other nondead cases	Enter the number of days the injured or ill worker was:  On job transfer from work (I)      Away from work (II)	Check the injury's column or choose one type of illness:  (1) sprain/strain      (2) cut/割傷      (3) fracture      (4) burn      (5) heat stroke (6) cold/寒害      (7) chemical exposure      (8) electrical shock      (9) explosion      (10) other	
	Chamrak, George R.	Quality Assurance Mgr.	8/29/2001	Factory QA	Laceration, R index finger	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
003-2 001	Spudwills, R.	Machine Assembler	1/9/2001	Machine Shop	Contusion/Strain, Contusion to head, strain to left neck and shoulder	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	4 days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
003-2 001	Spudwills, R.	Machine Assembler	1/9/2001	Machine Shop	Contusion/Strain, Contusion to head, strain to left neck and shoulder	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
003-2 001	Rutherford, A.	Gum Unwrapping Mach Oper.	1/9/2001	Gum Recovery 1	Pain, Bilateral thumbs and hands	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
004-2 001	Pilipauskas, A.	Box Unwrapping Mach Oper.	01/17/2000	Inspecting/Packing 1	Strain and possible CTS, Right Shoulder, Arm, and Hand	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	10 days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
004-2 001	Pilipauskas, A.	Box Unwrapping Mach Oper.	01/17/2000	Inspecting/Packing 1	Strain and possible CTS, Right Shoulder, Arm, and Hand	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
006-2 001	Coria, Francisco	Laboratory Technician A	1/30/2001	Factory QA	Multiple strains, Rt. shoulder, elbow, wrist.	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	12 days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
006-2 001	Coria, Francisco	Laboratory Technician A	01/30/2000	Factory QA	Multiple strains, Rt. shoulder, elbow, wrist. Abrasion to L leg	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
007-2 001	Richmond, A.	Sheeting Machine Oper.	01/30/2000	Sheeting Sugarcane 1	Fracture, Tuft of left third finger	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	15 days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
007-2 001	Richmond, A.	Sheeting Machine Oper.	01/30/2000	Sheeting Sugarcane 1	Fracture, Tuft of left third finger	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	days	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Page Totals: 0 0 4 0 41

Please be sure to enter these totals in the Summary page (Form 300A) before you print it.

Page 1 of 1 (1) (2) (3) (4) (5)

100 Preview



# Determining Which Work-Related Illnesses and Injuries to Record

# Recordkeeping

## Employers with Multiple Worksites

**Employers must keep injury and illness records for each establishment.**

**OSHA defines an establishment as a “single physical location where business is conducted or where services are performed.”**



# Recordkeeping

## Employers with Multiple Worksites

- An employer whose employees work in dispersed locations must keep records at the place where the employees report for work.
- In some situations, employees do not report to work at the same place each day. In that case, records must be kept at the place from which they are paid or at the base from which they operate.

# Recordkeeping

## OSHA 301, Injury and Illness Incident Report

Each employer must complete the OSHA 301 form within seven calendar days from the time the employer learns of the work-related injury or illness.

This form includes more data about how the injury or illness occurred.



# Recordkeeping

## **OSHA 301, Injury and Illness Incident Report**

- Employees and former employees are guaranteed access to their individual OSHA 301 forms. Employee representatives will be provided access to the “information about the case” section of the OSHA 301 form in establishments where they represent employees.

OSHA poster

You Have a Right to a Safe  
and Healthful Workplace.

# IT'S THE LAW!

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthy conditions in your workplace. You or your representative may participate in the inspection.
- You can file a complaint with OSHA within 30 days of dissatisfaction by your employer for making safety and health complaints or for exercising your rights under the OSH Act.
- You have a right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violation.
- Your employer must remove workplace hazards by the date indicated on the citation and must verify that those hazards have been reduced or eliminated.
- You have the right to copies of your medical records or records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.



The Occupational Safety and Health Act of 1970 (OSHA), envisions safe and healthful working conditions for nearly 15 million workers throughout the Nation. The Occupational Safety and Health Administration, in the U.S. Department of Labor, has the primary responsibility for administering the OSH Act. The rights described may apply depending on the particular circumstances. To file a complaint, report an emergency, or call OSHA about enforcement or products, visit our website at [www.osha.gov](http://www.osha.gov) or call 1-800-321-OSHA or your nearest OSHA office.

Address: 5640 Fishers Lane  
Suite 3000  
Gaithersburg, MD 20889  
Fax Number: (301) 519-2210

Address: 5640 Fishers Lane  
Suite 3000  
Gaithersburg, MD 20889  
Fax Number: (301) 519-2210

Office: 202-233-1700  
Toll-Free: 1-800-321-OSHA  
Telecommunications (TTY): (202) 233-0247

If you need to speak immediately with an OSHA representative about your complaint, please file a complaint with your nearest OSHA office.

**1-800-321-OSHA**

**OSHA** Occupational Safety  
and Health Administration  
[www.osha.gov](http://www.osha.gov)  
U.S. Department of Labor

# Recordkeeping

## Misconduct

**As with any other law employers will be cited, and fined. Penalties are assessed.**

**If you violate the law you are negligent and if someone is hurt you can be liable.**

**Once you violate the law employers can be found to be negligent and liable.**

**If cited – this means that the law was violated and employees were placed in danger.**

# Recordkeeping

## Conflicting Management Directives

- Set an example by ensuring the entire message is appropriate
- If safety is paramount, avoid pressuring employees to overlook safety in favor of speed
- What are some messages that can give conflicting directives?
- How can we be clearer in communicating directives?

# Recordkeeping

## Summary

- You must comply with the laws, rules and standards to protect workers. Define the issue, evaluate alternate work methods, develop means and methods that will provide equivalent or better protection for the workers, and evaluate the need for a variance. No excuses.
- Protocol for activity hazard analysis must address the participation and involvement of the workers. Do you know what the culture and level of confidence is for workers to participate – and speak up? This is a critical factor.

# Recordkeeping

## Summary

- The identification of work methods, safety and health programs are preventive in nature. Your program, policies, procedures and behaviors must provide “prevention” actions that you can rely. Telling workers to be careful will not work.
- You must know your program, how it works, how the workers are involved, and you must know that you and your resources are looking out for each other.
- Seek SHARP recognition.



# Questions?



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endorsement by the U.S. Government.**

# Emergency Planning & Emergency Response Procedures



# Overview

## Emergency Planning



## Emergency Action Plan



## Considerations



# Emergency Planning

Overview

Why?

To prevent fatalities and injuries

To reduce damage to buildings  
and contents

To accelerate the return to normal  
operations after an emergency



# Emergency Planning

## Overview

## Why?



Floods,  
Hurricanes,  
Fires,  
Tornadoes



Toxic Gas  
Releases,  
Chemical Spills



Explosions. Civil  
Disturbances,  
Workplace  
Violence

# Emergency Planning

## Overview

## Why?

### Emergency Action Plan Guidelines - 1910.38

- An emergency action plan must be in writing, be kept in the workplace, and be available to employees for review.
- However an employer with 10 or fewer employees may communicate the plan orally to employees.

# Emergency Planning

Overview

How?

**Protect yourself, your employees, and your business by preparing a response to emergency situations before they arise. In a crisis, few people can think logically and clearly. Plan in advance!**



# Emergency Action Plan

## Overview

Covers designated actions employers and employees must take to ensure employee safety from fire and other emergencies.

Even if you are not specifically required to do so, compiling an emergency action plan is a good way to protect yourself, your employees, and your business during an emergency.

# Emergency Action Plan

## *Overview, continued*

**Include management and employees in the process of creating your plan.**

**Explain your goal of protecting lives and property in the event of an emergency, and ask for their help in establishing and implementing your emergency action plan.**

**Their commitment and support are critical to the plan's success.**

# Emergency Action Plan

## Include

The wide variety of potential emergencies that could occur in your workplace.

Should be tailored to your worksite and include information about all potential sources of emergencies.

# Emergency Action Plan

## Include

Developing an EAP necessitates a hazard assessment to determine what physical or chemical hazards in your workplaces could cause an emergency. If you have more than one worksite, each site should have an emergency action plan.



# Emergency Action Plan

Include

At a minimum

- A preferred method for reporting fires and other emergencies
- An evacuation procedure
- Emergency escape procedures & route assignments; such as floor plans, workplace maps, & safe or refuge areas

# Emergency Action Plan

**Include**

**At a minimum**

**Names, titles, departments, and telephone numbers of individuals both within and outside your company to contact for additional information or explanation of duties and responsibilities under the EAP**

# Emergency Action Plan

## Include

### At a minimum

- Procedures for employees to perform or shut down critical plant operations, operate fire extinguishers, or perform other essential services (that cannot be shut down) before evacuating.
- Rescue and medical duties for any workers designated to perform them.

# Emergency Action Plan

Include

At a minimum



You also may want to consider designating an assembly location and procedures to account for all employees after an evacuation.

# Emergency Action Plan

Include

Not required, but helpful

- The site of an alternative communications center to be used during a fire or explosion.
- A secure on- or off-site location to store originals or duplicates of accounting records, legal documents, employees' emergency contact lists, etc.

# Emergency Action Plan

## Response Procedure

Establish Procedures for:

### Immediate Response:

- Reporting a fire
- Emergency evacuations
- Employees who remain to operate

# Emergency Action Plan

## Response Procedure

Establish Procedures for:

### Evacuations

- Critical plan operations before they evacuate
- Accounting for all employees
- Patients after evacuation



### Disasters

- Fire, Earthquakes, Tsunami
- Explosion, Bomb Threats, Chemical Spills

# Emergency Action Plan

## Response Procedure

Establish Procedures for:

### Dangerous Situations

- Workplace Violence
- Utility, Failure



### Rendering Aid

- Medical Emergency, Triage, First aid on site
- Physician and emergency care nearby

# Emergency Action Plan

## Response Procedure

### Alerting Your Employees

Your plan must include a way to alert employees, including disabled workers, to evacuate or take another action, and how to report emergencies, as required.

# Emergency Action Plan

## Response Procedure

### Alerting Your Employees

Make sure alarms are distinctive and recognized by all employees as a signal to evacuate the work area or perform actions identified in your EAP.

Make available an emergency communications system such as a public address system, portable radio unit, etc. to notify employees of the emergency and to contact local law enforcement, the fire department, and others.

# Emergency Action Plan

## Response Procedure

### Alerting Your Employees

**Stipulate that alarms must be able to be heard, seen, or otherwise perceived by everyone in the workplace. Consider providing an auxiliary power supply in the event that electricity is shut off.**

- 29 CFR 1910.165(b)(2) offers more information on alarms

# Emergency Action Plan

## Response Procedure

### Alerting Your Employees

**Using tactile devices to alert employees who would not otherwise be able to recognize an audible or visual alarm.**

**Provide an updated list of key personnel such as the plant manager or physician, in order of priority, to notify in the event of an emergency during off-duty hours.**

# Emergency Action Plan

## Response Procedure

REMEMBER!

- R** Rescue
- A** Alarm
- C** Contain / Confine
- E** Extinguish or Evacuate

# EAP Considerations

## Employee Training

Include

**Individual roles & responsibilities**

**Threats, hazards & protective actions**

**Notification, warning & communications procedures**

**Means for location of family members in an emergency**

**Emergency response procedures**

# EAP Considerations

## Employee Training

Include



### Detailed Info on:

- Evacuation, shelter and accountability procedures
- Location and use of common emergency equipment
- Emergency shutdown procedures

# EAP Considerations

## Employee Training

### Practice

**Review your emergency action plan with your employees**

**Ensure all employees and management have proper training**

# EAP Considerations

## Employee Training

## Practice

**Hold practice drills as often as necessary to keep employees prepared**

- **Include outside resources such as fire and police departments when possible. After each drill, gather management and employees to evaluate the effectiveness of the drill. Identify the strengths and weaknesses of your plan and work to improve it.**

# EAP Considerations

## Employee Training

### Frequency

- Develop your initial plan
- Introduce new equipment, materials or processes into the workplace that affect evacuation routes
- Change the layout or design of the facility
- Revise or update your emergency procedures
- Hire new employees

In case of  
Emergency...

# EAP Considerations

## Site Specific



Consider hazardous materials such as flammable, explosive, toxic noxious, corrosive, biological, oxidizable or radioactive substances.

# EAP Considerations

## Site Specific

### Hazardous Materials

If you use or store hazardous substances, you face an increased risk of an emergency involving hazardous materials and should address this possibility in your EAP.

OSHA's Hazard Communication Standard (29 CFR 1910.1200) requires employers who use hazardous chemicals to inventory them, keep the manufacturer-supplied MSDS in a place accessible to workers, label containers with hazard information, & train employees to protect themselves against those hazards.

# EAP Considerations

## Site Specific

### Hazardous Materials

**Determine from your hazardous chemical inventory what hazardous chemicals you use and gather the MSDSs for each.**

- **MSDS describes the chemical's hazard information, list precautions to take when handling, storing, or using; and outline emergency and first-aid procedures.**

# EAP Considerations

## Special Equipment

### Consider

- Safety glasses, goggles or face shields for eye protection.
- Hard hats and safety shoes for head and foot protection.
- Proper respirators
- Chemical suits, gloves, hoods and boots for body protection from chemicals.



# EAP Considerations

## Special Equipment, *continued*



Special body protection from radical environmental conditions such as extreme temperatures



Special equipment or warning devices necessary for hazards unique to your worksite.

# EAP Considerations

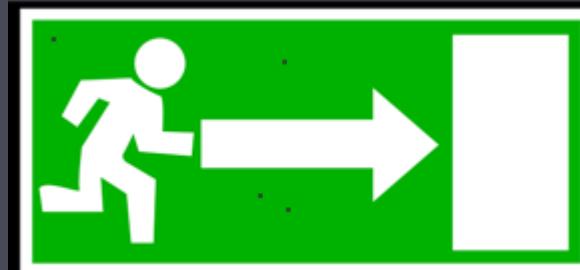
## Exits

### Exit Access

That part of an exit route that leads to an exit (a corridor that leads to a stairway exit).

### Exit Route

A continuous and unobstructed path of exit travel from any point within a workplace to a place of safety.

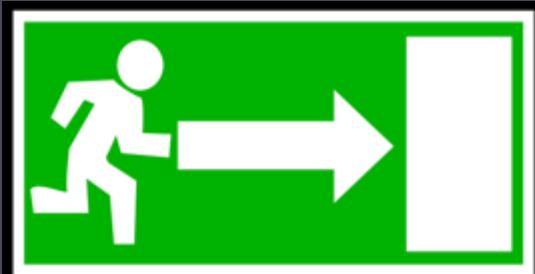


# EAP Considerations

## Exits

### Exit

Part of an exit route that provides a protected way of travel to the exit discharge.



### Exit Discharge

Part of the exit route that leads directly outside or to a street, walkway, refuge area or open area with access to the outside.

# EAP Considerations

## Exits

### Basic Requirements - 1910.36

Exit routes must be permanent

Exit must be separated by fire resistant material

Openings into an exit must be limited

The number of exit routes must be adequate

Exit discharge must lead directly outside

Exit doors must be unlocked from the inside

A side-hinged exit door must be used

Exit route ceiling at least 7' 6" H X 28" W



# EAP Considerations

## Exits

### Key Components

Danger to employees and patients must be minimized

Must be free and unobstructed

Safeguards [sprinklers, alarms, exit lighting] must be in working order at all times

Lighting and marking of exits must be clearly visible

Signs must say EXIT at least 6" H x 3/4"

# EAP Considerations

## Exits

### Key Components

**At least two exit routes must be available in a workplace to permit prompt evacuation during an emergency.**

**The exit routes must be located as far away as practical from other exits, so that if one exit route is inaccessible, employees can still evacuate safely.**

# Questions

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# Hazard Identification Plan



# Overview

Hazard  
Identification  
Plan



Costs



Identifying  
Hazards



# Introduction

## Safety & Health Program

- Employers are to have a written safety and health program.

# Introduction

## Prevention

- OSHA Standards are preventative.
- These Standards and Rules are required to be implemented to prevent injury and illness to your workers and your resources.

# Introduction

## Prevention

- OSHA citations are “after the fact” notices that you are not in compliance with a law that you should have been in compliance.
- Your defense is the fact that you have a program that provides a safe and healthful workplace free from recognized hazards.

# Hazard Identification Plan

## Identify the Hazards

- Focus Four (construction)
- General Industry



# Hazard Identification Plan

## Construction: Focus Four

- One in five (1/5) private industry, worker deaths are in construction.
- Of those, nearly two-thirds (2/3) were caused by the Focus Four hazards.



# Hazard Identification Plan

## Construction: Focus Four

- In Hawaii, there were 18 fatalities, with 8 of those being in construction.
- More than ten of the total fatalities in Hawaii, were under the age of 34 (2015).



# Hazard Identification Plan

## General Industry (2015)

Sprain, strains, tears	324,700
Back injuries	155,740
Falls, slips, trips	238,610

The leading major event or was overexertion and bodily reaction.

# Hazard Identification Plan

**What can we do to mitigate  
these hazards to prevent  
injury?**

# Hazard Identification Plan

## Controls

**Identify  
controls that  
can be taken**

- Training
- Awareness
- Monitoring behavior
- Equipment
- Changing processes, etc.

# Hazard Identification Plan

## To Update Policies

**1. Identify  
necessary  
changes**

**2. Define the  
scope of work**

**3. Budget for  
the scope of  
work**

# Hazard Identification Plan

## To Update Policies

**4. Assign the responsibilities**

**5. Develop the policies and procedures**

**6. Implement them**

# Hazard Identification Plan

## To Update Policies

**7. Monitor to ensure the program is in place and effective.**

**8. Focus on values and principles not rules**

**9. Ensure you have an affirmative defense should you need it.**

# Hazard Identification Plan

## To Update Policies

### 10. Defend Your Program

Avoid penalties by having an effective safety and health program.

Can be defended by president or management.

A top down program is critical

# Costs

## Types of Accident Costs



**Know the cost of these actions, assign responsibilities, and establish accountability.**

# Costs

## Types of Accident Costs



**Direct Costs:  
Easily  
measured**



**Indirect  
Costs:  
Difficult to  
measure**

# Costs

## Impact of Accidents on Profits & Sales

The more accidents in a facility, the higher the insurance premiums

The higher the premiums, the lower the profit on each product sold

Both direct and indirect costs must be reimbursed through the profit margin on each product sold



# Costs

Any accident at work results in both direct and indirect costs, which are represented by the diagram below.

Injury, ill-health  
and damage

**Direct costs**

Lost time

**Indirect costs**

Extra wages/overtime

Damage to product, plant,  
buildings, tools and  
equipment

Sick pay

Clearing the site

Production delays

Investigation time

Fines

Excess on insurance claims

Loss of contracts

Loss of business reputation

Legal costs

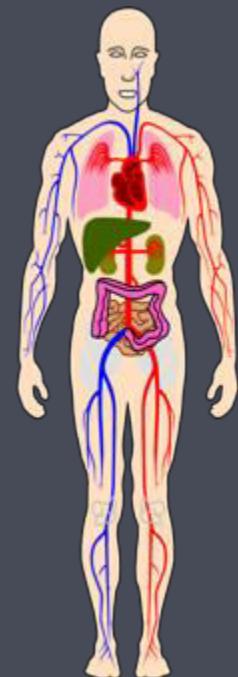
**Direct costs** tend to be  
the ones that we think of  
first.

**Indirect costs** may be  
those that are less  
obvious BUT, as you can  
see from the diagram,  
they account for more of  
the overall cost of an  
accident than the direct  
costs.

# Costs

## Costs Categorized by Body Part

Body Part	Average Direct Cost	Indirect Cost	Total Cost
Arm	\$2,785	\$12,533	\$15,318
Eye	\$266	\$1,197	\$1,463
Lower Back	\$6,420	\$7,704	\$14,124
Shoulder	\$5,338	\$6,406	\$11,744



# Costs

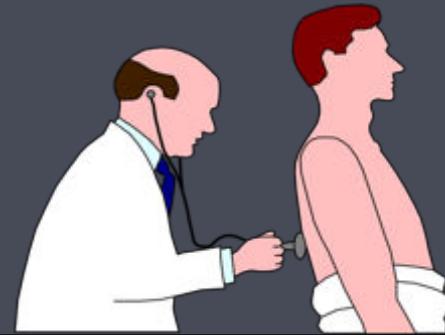
## Costs Categorized by Accident Cause



Cause	Average Direct Cost	Indirect Cost	Total Cost
Pushing or Pulling	\$4,841	\$7,746	\$12,587
Sharp Object	\$801	\$3,605	\$4,406
Struck Against	\$2,292	\$10,314	\$12,606
Struck By	\$3,216	\$5,146	\$8,362

# Costs

## Costs Categorized by Injury Type



Type	Averaged Direct Cost	Indirect Costs	Total Costs
Sprain	\$4,245	\$6,792	\$11,037
Laceration	\$1,101	\$4,955	\$6,056
Foreign Body	\$317	\$1,427	\$1,744

# Costs

## How to Estimate the Impact of Accidents on Profits

### Direct Cost

To calculate direct cost, enter the following:  
Total value of the insurance claim for injury or illness \$4,245

### Indirect cost

To calculate indirect cost, multiply direct cost by a cost multiplier. The cost multiplier that you use will depend on the size of the direct cost.

If your direct cost is:	Use this cost multiplier:
\$0-\$2,999	4.5
\$3,000-\$4,999	1.6
\$5,000-\$9,999	1.2
\$10,000 or more	1.1

$$\text{Direct Cost} \times \text{Cost Multiplier} = \text{Indirect Cost}$$
$$4,245 \quad \times \quad 1.6 \quad = \quad 6,792$$

# Costs

## How to Estimate the Impact of Accidents on Profits

### TOTAL COST

**Direct Cost + Indirect Cost = Total Cost**

\$4,245	+ \$6,792	= \$11,037
---------	-----------	------------

### IMPACT ON PROFITABILITY

Divide total profits by total sales to get profit margin.

$$\frac{\text{Total profits}}{\text{Total sales}} = \text{Profit Margin}$$

$$\frac{\$ 250,000}{\$ 5,000,000} = .05$$

Divide total cost of injury or illness by your profit margin to determine how many sales must pay for the injury or illness.

$$\frac{\text{Total cost of injury or illness}}{\text{Profit Margin}} = \text{Sales Required to Pay for Injury or Illness}$$

$$\frac{\$ 11,037}{.05} = \$ 220,740$$

# Costs

## Sales Required to Pay for an Accident



If your company profit is:

Accident Costs	1%	2%	3%	4%	5%
\$1,000	\$100,000	\$50,000	\$33,000	\$25,000	\$20,000
\$5,000	\$500,000	\$250,000	\$167,000	\$125,000	\$100,000
\$10,000	\$1,000,000	\$500,000	\$333,000	\$250,000	\$200,000
\$25,000	\$2,500,000	\$1,250,000	\$833,000	\$625,000	\$500,000
\$100,000	\$10,000,000	\$5,000,000	\$3,333,000	\$2,500,000	\$2,000,000

# Costs

## Sales Impact of Selected Injuries

Injury/ Illness	Average Direct Cost	Indirect Cost	Total Cost	Sales Needed (5% profit)
<b>Sprain</b>	\$4,245	\$6,792	\$11,037	<b>\$220,740</b>
<b>Laceration</b>	\$1,101	\$4,955	\$6,056	<b>\$121,120</b>
<b>Foreign Body</b>	\$317	\$1,427	\$1,744	<b>\$34,880</b>

# Costs

## Penalties

### OSHA penalties



**OSHA penalty  
for serious is  
\$12,675 (2017)**

# Costs

## Penalties

**Repeat citations  
can be costly:**

- Double the first citation or
- 10x higher than the first citation.

**Willful citations are:**

- OSHA: \$126,749

# Costs

## Table 2016 Top 10 Focus Four Violations

Subpart	Citations	Total Dollar Value	Description
1926.501	5,931	\$21,827,517	Fall protection
1910.1200	4,434	\$3,147,939	Hazard communication
1926.451	3,219	\$6,719,715	Scaffolds
1910.134	2,765	\$2,016,458	Respiratory protection
1910.147	2,694	\$11,297,922	Lockout/ tagout
1910.178	2,294	\$4,208,870	Powered industrial trucks
1926.1053	2,199	\$3,922,801	Ladders
1910.305	1,951	\$7,672,792	Machine guarding
1910.212	1,516	\$1,939,769	Electrical, Wiring Methods
1910.303	1,337	\$2,185,621	Electrical, general requirements

# Identifying Hazards

## Work Tasks vs. Safety

**Moving the ladder  
the safe way.**

**Moving the ladder  
the quick way**

**The only acceptable  
way is the safe way.**

# Identifying Hazards

## An Example

### Professional Standards

Medical Procedure: Would you trust a physician who:



Only followed  
some  
standards

or



Operated  
without  
consideration for  
standards and  
regulations

# Identifying Hazards

## An Example

### Professional Standards

Medical Procedure: Would you trust a physician who:

**Would you trust a physician who chose a professionally unacceptable method?**

All of the activities in the operating room are integrated, not separate, and must be adhered.

# Identifying Hazards

## Safe Choices

**The worker chooses the quick way because of their loyalty, dedication, and desire to please.**

**The employer chooses the quick way because it makes/saves money.**

# Identifying Hazards

## Safe Choices

No one rocks the boat (i.e. complains) for fear of making the company look bad.

A culture is created where choosing the unacceptable way is acceptable, tolerated, or encouraged.

# Identifying Hazards

## Hidden Messages

Be careful of sending contradictory safety messages

---

“Be careful”

---

“Lift properly”

---

“Speak up when something is not safe”

---

“We have a work stoppage rule for everyone”

---

“Watch out for each other”

---

# Identifying Hazards

## Clear Messages

Give clear instructions.

Don't put the responsibility of safety on workers exclusively.

Communicate safety expectations.

# Identifying Hazards

## Examples of Hazards



# Identifying Hazards

## Examples of Hazards



# Identifying Hazards

## Examples of Hazards



# Questions?

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# Incident Investigation Procedure



# Overview

Investigation



Guidelines



Plan



# Incident Investigation

## Purpose

Prevent injuries & Illnesses

Save Lives

Save money

Demonstrate commitment to

Health & safety

Promote positive workplace morale

Improve management

# Incident Investigation

## Purpose

Effective incident investigations are the right thing to do, not only because they help employers prevent future incidents, but because they help employers to identify hazards in their workplaces and shortcomings in their safety and health management programs.

The National Safety Council estimates that, on average, preventing a workplace injury can save \$39,000, and preventing a fatality more than \$1.4 million.

# Incident Investigation

## Purpose

Investigating a worksite incident— a fatality, injury, illness, or close call— provides employers and workers the opportunity to identify hazards in their operations and shortcomings in their safety and health programs.

Most importantly, it enables employers and workers to identify and implement the corrective actions necessary to prevent future incidents.

Incident investigations focus on identifying and correcting root causes, not on finding fault or blame, also improve workplace morale and increase productivity, by demonstrating an employer's commitment to a safe and healthful workplace.

# Incident Investigation

## Terms

### Incident

- A work-related event in which an injury or ill-health (regardless of severity) or fatality occurred, or could have occurred.

### Root Causes

- Underlying reason(s) for unsafe conditions.
- Root causes generally reflect management, design, planning, organizational or operational failings

### Close Call

- An incident that could have caused serious injury or illness but did not; also called a “near miss.”

# Incident Investigation

## Incident Occurred

## Close Calls

Incident Investigator that follow a systems approach are based on the principle that the root causes of an incident can be traced back to failures of the programs that manage safety and health in the workplace.

# Incident Investigation

## Incident Occurred

### Now what?

Investigate all incidents, including “close calls”

React quickly with the established investigation procedure to find the root causes and implement corrective actions.

Quick and planned actions demonstrate your company's commitment to the safety and health of your workers.

Your willingness to improve your safety and health management program can help to prevent future incidents.

# Incident Investigation

## Incident Occurred

### Approaches

#### Behavioral Safety Approach:

Incorrectly assumes that the majority of workplace incidents are simply the result of “human error” or “behavioral” failures.

#### Systems Approach:

Concludes that carelessness or failure to follow a procedure alone was NOT the cause of an incident.

# Incident Investigation

## Incident Occurred

### Approaches

- When a shortcoming is identified, it is important to ask why it exists and why it was not previously addressed.
- Otherwise, you may fail to discover the underlying or root causes of the incident, and therefore fail to identify the systemic changes and measures needed to prevent future incidents.

# Incident Investigation

## Investigate Programs, Not Behaviors

### Examples

**1.**  
**Was the procedure or safety rule followed?**

**2.**  
**Did production pressures play a role?**

**3.**  
**Was the procedure out-of-date or safety training inadequate?**

# Incident Investigation

## Identifying Root Causes

- The GOAL is to change the conditions under which people work by eliminating or reducing the factors (program deficiencies, root causes) that create unsafe conditions.
- This is typically done by implementing adequate barriers and safeguards against the factors that cause unsafe conditions or actions.

# Incident Investigation

## Identifying Root Causes

- Root causes often involve multiple deficiencies in the safety and health management programs.
- These deficiencies may exist in areas such as workplace design, cultural and organizational factors, equipment maintenance and other technical matters, operating systems and procedures, staffing, supervision, training, and others.
- Eliminating the immediate cause(s) is like cutting weeds, while eliminating the root cause(s) is equivalent to pulling out the roots of the weed.

# Incident Investigation

## Establish an Incident Investigation Program

### Guidelines

**How and when management is to be notified of the incident**

**Notifying OSHA, which must comply with reporting requirements:**

- All work-related fatalities within 8 hours
- All work-related inpatient hospitalizations, all amputations and all losses of an eye within 24 hours.

# Incident Investigation

## Establish an Incident Investigation Program

### Guidelines

---

**Who is authorized to notify outside agencies (i.e., fire, police, etc.)?**

---

**Who will conduct investigations and what training they should have received?**

---

**Timetables for completing the investigation and developing & implementing recommendations.**

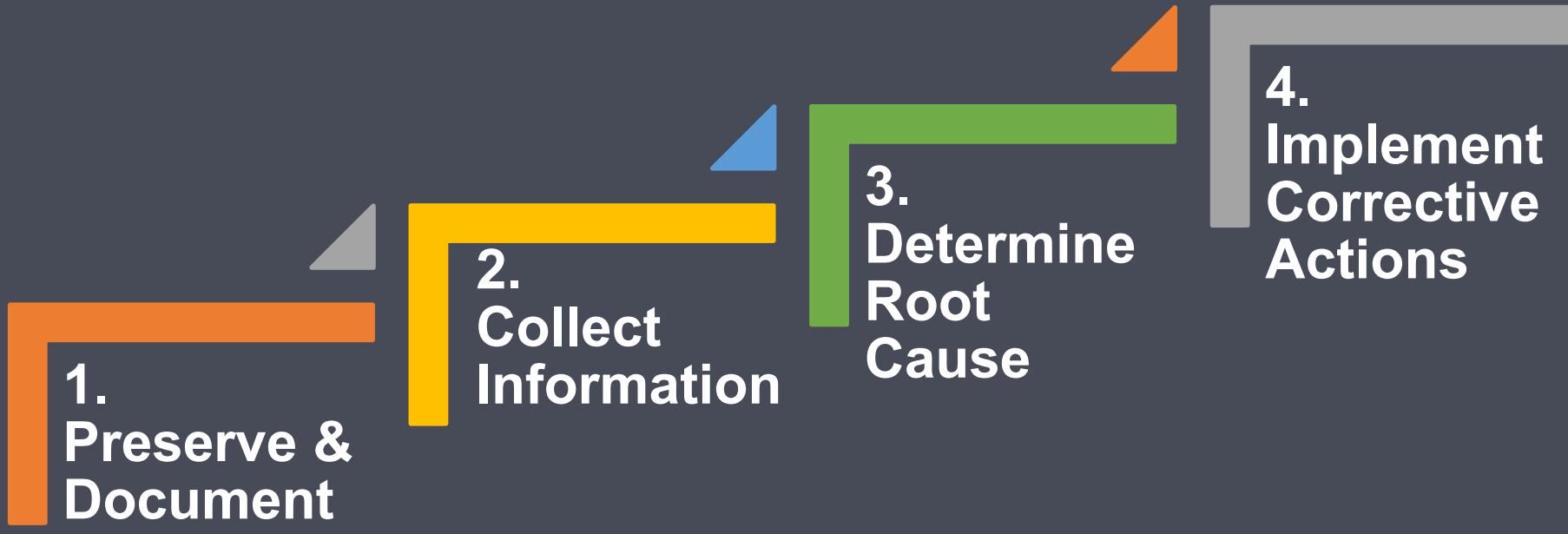
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**Who will receive investigation recommendations? Who will be responsible for implementing corrective actions?**

# Incident Investigation

## Establish an Incident Investigation Program

### A Four-Step Systems Approach



# Incident Investigation

## Establish an Incident Investigation Program

### STEP 1: Preserve & Document the Scene

Preserve the scene to prevent material evidence from being removed or altered

- Use cones, tape, and/or guards, etc.

Document the incident facts such as the date of the investigation and who is investigating.

- Essential to documenting the scene is capturing the injured employee's name, injury description, whether they are temporary or permanent, and the date and location of the incident.
- Investigators can also document the scene by video recording, photographing and sketching.

# Incident Investigation

## Establish an Incident Investigation Program

### STEP 2: Collect Information

Incident information is collected through interviews, document reviews, and other means.

# Incident Investigation

## Establish an Incident Investigation Program

### STEP 2: Collect Information, cont'd

In addition to interviews, investigators may find other sources of useful information, such as:

- Equipment manuals
- Industry guidance documents
- Company policies & records
- Maintenance schedules, records, & logs
- Training records (and any communication to employees)
- Audit & follow-up reports
- Enforcement policies & records
- Previous corrective action recommendations

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 2: Collect Information: INTERVIEWING

When interviewing injured workers and witnesses it is crucial to reduce their possible fear and anxiety, and to develop a good rapport. When conducting interviews, investigators should:

- Conduct the interview in the language of the employee/interviewee; use a translator if needed.
- Clearly state that the purpose of the investigation and interview is fact-finding, not fault-finding.
- Emphasize that the goal is to learn how to prevent future incidents by discovering the root causes of what occurred.

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 2: Collect Information: INTERVIEWING, cont'd

Establish a climate of cooperation; avoid anything that may be perceived as intimidating or in search of someone to blame.

Let employee know that they can have an employee representative (e.g., labor representative), if available and/or appropriate.

Ask the individuals to recount their version of what happened.

Do not interrupt the interviewee.

Take notes and/or record the responses; interviewee must give permission prior to being recorded.

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 2: Collect Information: INTERVIEWING, cont'd

Have blank paper and or sketch available for interview to use for reference.

Ask clarifying questions to fill in missing information.

Reflect back to the interviewees factual information obtained; correct any inconsistencies.

Ask what they think could have prevented the incident, focusing on conditions and events preceding the injury.

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 3: Determine the Root Cause

The root causes are the underlying reasons why the incident occurred. Root causes generally reflect:

- Management
- Design
- Planning
- Organization and/or operational failings

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 3: Determine the Root Cause, cont'd

Determining the root cause is the result of persistently asking “why”

Determining the root cause is the most effective way to ensure the incident does not happen again.

Conclusions such as “worker was careless” or “employee did not follow safety procedures” don’t get at the root causes of the incident.

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 3: Determine the Root Cause, cont'd

#### Avoid the Incomplete or Misleading

- To avoid these incomplete and misleading conclusions in the investigative process, investigators need to continue to ask “why?” as in, “Why did the employee not follow safety procedures?”
- If the answer is “the employee was in a hurry to complete the task and the safety procedures slowed down the work”, then ask, “Why was the employee in a hurry?”
- The more and deeper “why?” questions asked, the more contributing factors are discovered and the closer the investigator gets to the root causes.

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 3: Determine the Root Cause, cont'd

If a procedure or safety rule was not followed, why was the procedure or rule not followed?

Did production pressures play a role, and, if so, why were production pressures permitted to jeopardize safety?

Was the procedure out-of-date or safety training inadequate? If so, why had the problem not been previously identified, or, if it had been identified, why had it not been addressed?

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 4: Implement Corrective Action

The investigation is not complete until corrective actions are implemented that address the root causes of the incident.

Implementation should entail program level improvements and should be supported by senior management.

- Superficial conclusions such as "Bob should have used common sense," and weak corrective actions such as "Employees must remember to wear PPE", are unlikely to improve safety culture or prevent future incidents.

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 4: Implement Corrective Action, cont'd

**Some corrective actions can be general, across-the-board improvements to workplace safety environment. Consider:**

- Strengthen & develop written comprehensive safety and health plan.
- Revise safety policies to establish responsibility and accountability.
- Revise purchasing/contracting policies to include safety considerations.
- Changing safety inspection process to include line employees along with management representatives.

# Investigation Procedure

## Establish an Incident Investigation Program

### STEP 4: Implement Corrective Action, cont'd

In planning corrective actions and how best to implement them, employers may find that some root causes will take time and perseverance to fix. Persisting in implementing substantive corrective actions, however, will not only reduce the risk of future incidents but also improve the company's safety, morale and its bottom line.



# Questions



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# Leadership Commitment to Operational Safety



# Overview

**Business-Wide  
Injury  
Prevention**



**Safety  
Commitment**



**Bottom  
Line**



# Business-Wide Injury Prevention



**Company  
Emphasis**

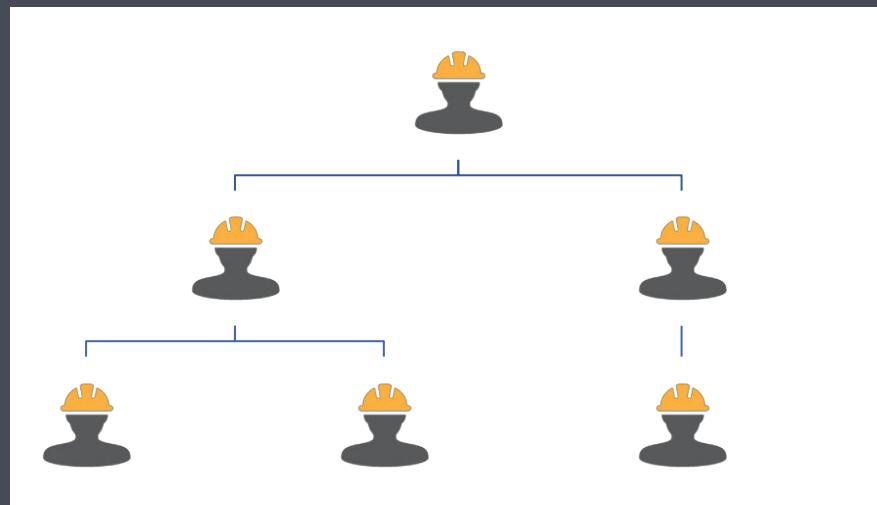
&

**Prevention  
& Safety  
Committee**

# Business-Wide Injury Prevention

## Company Emphasis: Management

Must support new initiatives. An essential element of this program is the involvement of the top managers down to the workers.



# Business-Wide Injury Prevention

**Company Emphasis: Communicate & Delegate**

**It is Management's responsibility to assign responsibilities and control work activities to ensure it is safe.**

# Business-Wide Injury Prevention

**Company Emphasis: Behave Lawfully**



# Business-Wide Injury Prevention

## Prevention & Safety Committee Safety Staff

As in any management position, the job description, the goals and objectives, the performance measures and the evaluations should tell accurately describe the job.

# Business-Wide Injury Prevention

**Prevention & Safety Committee Safety Staff Best Serves the Organization If:**

**Reports directly to the President**

**Accountable for determining the “State of the Program”**

**Consults for other managers, department heads, supervisors and lead persons**

# Business-Wide Injury Prevention

**Prevention & Safety Committee Safety Staff Should:**

**Review and evaluate performance measures**

**Analyze effectiveness, compliance with regulations**

**Initiate efforts to improve safety**

# Business-Wide Injury Prevention

**Prevention & Safety Committee Safety Staff  
Should:**

**Serve as a liaison  
with the legal  
entities to support  
the company.**

**Serve as the  
investigator for  
accidents, OSHA  
inspections of  
accidents, etc.**

# Business-Wide Injury Prevention

**Prevention & Safety Committee Safety Staff Should:**

**Be well versed in OSHA regulations, standards, directives, and interpretations.**

**Have experience with industry safety and health profession.**

**Commitment toward professionalism and demonstrated credibility.**

# Business-Wide Injury Prevention

## Prevention & Safety Committee Safety Staff Small Business Considerations

- It is possible to split up the tasks and program elements to share the responsibilities.
- There are assumptions and understandings that must be clear up front.
- Everyone should understand the elements of the safety and health program and understand that each must do their share to ensure safe and healthful workplaces.

# Business-Wide Injury Prevention

Prevention & Safety Committee Safety Staff:  
Collateral Duty Considerations



# Business-Wide Injury Prevention

## Prevention & Safety Committee Safety Staff: Collateral Duty Considerations

HR person is assigned collateral duty safety position.



Monitor the action table showing tasks and assignment of each task

# Business-Wide Injury Prevention

## Prevention & Safety Committee Safety Staff: Collateral Duty Considerations

HR person is assigned collateral duty safety position.



Develop activity hazard analyses for operations department or implement safety program

# Safety Considerations

## Who is Responsible?

It is Management's responsibility to assign responsibilities and control work activities to ensure it is safe.



# Safety Considerations

## Who is Responsible? Designing a Safety Program

The program can be developed by any manager who is authorized to assign work.



The program must be effective and should be monitored accordingly.

# Safety Considerations

## Safety Plan Policies & Procedures



The program identifies policies and procedures.

It says what has to be done and who is responsible for each action.

# Safety Considerations

## Safety Plan Policies & Procedures

Provides  
outline and  
elements  
for:

- Compliance with the regulations,
- Assigns responsibilities, and
- Provides consistency.

# Safety Considerations

## Excuses



**Rules are  
too  
restrictive**



**Rules  
prevent  
us from  
doing  
work**



**Rules are  
political**



**Rules are  
stupid**



# Bottom Line

## Protect Your Workers

**Stay Safe! Develop an alternate work method or procedure.**

**Request a variance if you can.**

**If you can't do it – do something about it.**

**Don't leave your workers out there to get hurt.**

# Bottom Line

## Things to Consider

**Roles and Responsibilities need to be established**

**Program goals need to be clearly defined**

**Sub-contractors need to be aware of safety policies**



# Questions?



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