Weekly Safety Meetings Select Edition
Safety Training for the Construction Industry

San Diego Services

FEB WEEK 1

Lockout/Tagout

Every year people are injured, disabled, and killed because they do not follow simple, basic lockout/tagout procedures. The accidents happen because workers don't disconnect power sources before working on a machine or because someone else starts the equipment, unaware that they are endangering a fellow worker. When OSHA revised its lockout/tagout standard it estimated that it would save at least 100 lives per year and prevent over 25,000 lost workday injuries.

The lockout/tagout standard requires that hazardous energy sources be "isolated and rendered inoperative" before beginning maintenance or service. It is important to follow your lockout/tagout procedures to prevent accidental start-ups, electrical shock, or the release of stored energy. These procedures should cover how to perform a shutdown, how to isolate equipment, how to safely release stored energy, and how to apply and remove lockout devices. Outside contractors need to be informed of lockout/tagout procedures and should be instructed to follow them to the letter.

Locks and tags do not de-energize equipment by themselves. They should be attached only **after** the equipment has been isolated from its energy sources. Before working on any system, the equipment must be in a zero energy state. Drain all valves, bleed off air, eliminate hydraulic pressure, and disconnect electrical power. There are many kinds of energy sources: electrical, mechanical, pneumatic, hydraulic, chemical, thermal, gravity, water pressure, air pressure, and others. Always look for hidden energy sources and make sure all energy sources are locked out. Overlooking an energy source can prove fatal.

Check and test everything before putting on your lock. Make sure that the switches can't be turned on and be certain that the power can't be turned back on without your knowledge. If several people are working on the same system, have each of them add their lock at the same time to a multiple lockout device that can accommodate several locks.

Everyone on the jobsite must **always** follow the lockout/tagout procedures. Deviation from these procedures can result in accidents or deaths. It's not worth the risk. By following lockout/tagout procedures, yours could be one the 100 lives saved.

SAFETY REMINDER

Typically, a piece of equipment is locked out for one shift. The next shift should apply their locks separately!

NOTES:

SPECIAL TOPICS /EMPLOYEE SAFETY RECOMMENDATIONS/NOTES:

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FEB WEEK 2

Lockout/Tagout: Controlling Hazardous Energy

"Lockout/tagout" refers to safety practices and procedures designed to prevent injuries and deaths caused by the unexpected activation of machinery and equipment, or the release of other hazardous energy while workers perform maintenance, repairs, cleaning, adjusting, or servicing activities. **Lockout** involves using a security device or lock to prevent the unintentional startup of equipment. **Tagout** is the practice of using tags to make workers aware that equipment should not be energized until the lock and tag are removed.

Following is a list of common energy sources and the potential hazards they create for you:

- ***Electricity:*** electrical shock and burns.
- ***Hydraulic pressure:*** fluid spray and machine movement.
- ***Thermal energy:*** burns and frostbite.
- ***Gravity:*** crushing injuries and engulfment.
- ***Fluids:*** drowning and suffocation.
- ***Chemical energy:*** chemical exposure, fire, and burns.
- ***Mechanical energy:*** amputation and crushing injuries.
- ***Pneumatic energy:*** pressure release and machine movement.

Before working on, repairing, adjusting, or replacing machinery or equipment, notify affected employees that will be out of service. Shut down the machinery or equipment following the appropriate procedures. Remember that different equipment may have different procedures. Place switches in the "off" position. Isolate all energy control devices: disconnect electricity; block moving parts; release stored energy; drain and bleed lines; block, vent, and drain fluid lines; disconnect pneumatic lines; and lower suspended parts to their rest positions.

Place a lock on all energy sources and isolation devices. Verify isolation. Check voltage on circuits. Check pressure on gauges and fluid lines. Attempt to start the equipment or activate the system in the normal manner and from all control points. Then, return all control devices to the "off" or neutral position. Remember that if more than one employee is assigned to a task requiring lockout/tagout, each of them must place his or her own lock and tag on each energy-isolating device.

Once the task is finished, it is time to reverse your steps. Only the person who performed the lockout/tagout procedures is allowed to remove the lock and tag. Before a lock or tag is removed and the energy is restored, the work area should be inspected. Make sure everyone is accounted for, all guards are replaced, and all tools and materials are out of the way.

SAFETY REMINDER

Identify • Isolate • Release • Lockout • Verify • Inspect • Clear

NOTES:

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FEB WEEK 3

Ground-Fault Circuit Interrupters (GFCIs)

In a normal electric circuit, the current flows to a tool, appliance, or light fixture through a hot wire and back to the circuit breaker through a neutral wire. There should not be any current lost; that is, the current in the hot wire should be identical to that in the neutral wire. Any difference is dangerous because it indicates a current leak. If the leaking current flows through a high-resistance conductor or device, it could generate enough heat to start a fire. Electrical leaks can also cause a tool or appliance to become charged with electricity. If you touch the device, your body can provide the path to ground and you could suffer a serious shock. These hazards can be reduced by grounding the devices or stopping the flow of electricity when a leak is detected. Today we will talk in detail about the second option.

A ground-fault circuit interrupter (GFCI) is a device designed to protect you from electrical shock. A GFCI monitors the current in the circuit's hot and neutral conductors. If the two currents are not identical, a leak must exist. When such a leak is detected, the GFCI, which works like a fast-acting circuit breaker, will trip and shut off the power in 1/40 of a second. This eliminates the potential of you being shocked or a fire being started.

If an assured equipment grounding conductor program is not in place, then all equipment that can be plugged into a 110-volt receptacle must be protected by a GFCI. You can use a GFCI plug-in device or an electric circuit that has a GFCI built into it either at the receptacle or at the circuit breaker. To ensure that GFCIs are working properly, you should follow the manufacturer's instructions for testing.

Some of you may think that GFCIs are just a nuisance because they trip all the time. Actually, they are doing exactly what they are designed to do, which is to protect you from electrical shock. There are several conditions that will trip a GFCI. They include wet or defective power tools, improper installation, an overloaded circuit, excessive lengths of temporary wiring, and long extension cords. To avoid having a GFCI trip, inspect electric tools for damage before you use them and avoid working in wet or damp areas. And if it does trip, don't be irritated—be glad you weren't shocked!

According to OSHA, electrical shock is one of the leading causes of construction accidents. It only takes a small amount of electric current (50 milliamperes) to cause ventricular fibrillation of the heart. No one wants to be an electrocution statistic or worse yet, a fatality.

SAFETY REMINDER

Make sure electrical tools *em*power you rather than *over*power you.

NOTES:

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FEB WEEK 4

Extend Your Knowledge of Extension Cord Safety

As the name suggests, extension cords extend or expand our work area. They provide electricity for construction workers to run portable power tools and equipment where no permanent power sources are available. Extension cords are the umbilical cord of the construction industry. However, they also present tripping, fire, shock, and electrocution hazards when improperly used.

Keep these safety tips in mind when you use extension cords:

- Inspect extension cords before each use. They should be free from exposed wiring and any other damage.
- Never use a defective extension cord. Remove defective cords from service immediately.
- Use three-wire extension cords with a working grounding conductor.
- Look for a UL or FM label, which indicates that the cord design has been tested for safety hazards.
- Make sure cords are rated for hard or extra-hard usage.
- Ensure that the wire sizes of extension cords can handle the load without heating up.
- Do not overload extension cords by plugging too many tools into the same cord.
- Use a Ground Fault Circuit Interrupter (GFCI) when using extension cords outdoors.
- Never file or cut the plug blades or grounding pin of a cord so it can plug into a socket.
- Place extension cords in such a way as to prevent tripping hazards.
- Do not run extension cords through walls, ceilings, or floors.
- Never attach extension cords to any surface using nails or staples.
- Position extension cords away from areas where they may be damaged by vehicular or pedestrian traffic.
- Remember that extension cords are designed for temporary use.
- Unplug extension cords when they are not in use.

Choose the right cord, inspect it, run it carefully, and then put it away properly. You can avoid tripping, fire, shock, and electrocution hazards associated with extension cords by thinking carefully and then acting safely.

SAFETY REMINDER

Teach your children about the dangers of electricity.

Cover unused outlets with safety covers to protect young children from shocks and electrocution.

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