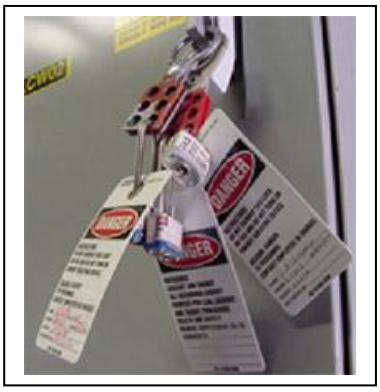
MECHANICAL TRADES AND ELECTRICIANS SAFETY RULES, POLICIES, AND PROCEDURES

Lockout (or Tagout) Procedure

This procedure establishes the minimum requirements for the lockout or tagout of electrical disconnect, gas, and steam valves. It shall be used to ensure that the equipment is isolated from all potentially hazardous energy and locked out or tagged out before employees perform any servicing or maintenance activities where the unexpected start-up or release of stored energy could cause injury.

This procedure applies whenever an employee is servicing equipment in a manner which requires the removal of guards or other safety device or in a manner that exposes the employee to electrical, mechanical, gas, or steam hazards should the equipment be accidentally re-energized during service work. Typical operations covered include:

- Work on steam lines and boilers.
- Work on electric motors and circuits.
- Work on refrigeration and air conditioning equipment.
- Work on gas lines.
- Work on hard-wired process machines that are not cord and plug connected.
- Work on the wood planer and radial saw.



Employees authorized to lockout and tagout are:

- Plumbing Shop: All Employees.
- Electrical Shop: All Employees.

1. Preparation for Lockout or Tagout

    a. Make a survey to locate and identify all isolating devices to be certain which switch(es), valve(s), or other energy isolating devices apply to the equipment to be locked or tagged out.

2. Sequence of Lockout or Tagout System

    a. Notify all affected employees that a lockout or tagout system is going to be utilized and the reason therefore. The authorized employee shall know the type and magnitude of energy that the machine or equipment utilizes and shall understand the hazards thereof.

b. If the machine or equipment is operating, shut it down by the normal stopping procedure (depress stop button, open toggle switch, etc.).

c. Operate the switch, valve or other energy isolating device(s) so that the equipment is isolated from its energy source(s). Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure, etc.) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, etc.

d. Lockout and tagout the energy isolating devices with assigned individual lock(s) and tag(s). Tag will include name, shop, date, reason for disablement, and phone number. If the equipment cannot be locked out, use a tagout only.

e. After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate.

CAUTION: Return operating control to "neutral" or "off" position after the test.

The equipment is now locked out or tagged out.

3. Restoring Machines or Equipment to Normal Production Operations

a. After servicing and/or maintenance are complete and equipment is ready for normal operations, check the area around the machine or equipment to ensure that no one is exposed.

b. After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices. Tags and locks are to be removed by the individual performing the work and who installed the tag and lock. Operate energy isolating devices to restore energy to the machine or equipment.

High Voltage Electric Boiler (RAC)

1. Prior to working on the boiler, the electricians shall disconnect the boiler and lock out disconnect. Rubber gloves shall be used and a rubber mat shall be in place.

Electrical Safety

1. As a rule, electrical equipment and circuits 50V or greater should be de-energized and tested before maintenance is performed. (See lockout procedures).

2. When work must be done on energized equipment greater than 50V, two employees are required, appropriate insulating tools and supervisory approval will be required.

3. Electrical circuits must be identified at the breaker panel. If a new label is required because of changes in the building, it is the electrical supervisor's responsibility to have the new label typed and posted. All blank spaces must be covered and not left exposed.

4. All covers removed for service must be replaced.

5. Fuses should not be removed under a load. If the fuse is not protected with a switch, remove the supply end first.

General Safety Procedures for Welding

1. No welding on drums which contain flammable liquids and oils.

2. Some pipes, tanks, railings, etc., may be coated with paint which contains lead. The coating should be removed 4" from the area welded. If this is not feasible, ventilation will be required—contact the Safety Officer. When removing the coating, wear a respirator and keep the area wet. Catch the scrapings on plastic and place in a bag for disposal by the Safety Officer.

3. All fire hazards shall be removed from the area where welding shall be performed. Protect floors, walls, equipment, vehicles, etc. from slag and sparks.

4. A fire extinguisher shall be located near the welding area.

5. A fire watch is required for welding in areas with appreciable combustibles within 35 feet.

6. Goggles are required for torch soldering which does not require filter lenses.

7. When welding is suspended for lunch, etc., all electrodes shall be removed, and the machine disconnected. For fuel gas, the cylinders shall be shut off.

8. At least 2000 cfm exhaust ventilation per welder is required in rooms less than 10,000 cubic feet or less than 16 feet ceiling height and in all confined spaces.

9. Ventilation is required for all indoor welding involving:

    a. Fluorine.

    b. Zinc.

    c. Lead (respirator outdoors)

    d. Beryllium (special permit required).

    e. Cadmium (respirator outdoors).

    f. Mercury (respirator outdoors).

10. Use screens around work area to protect the eyes of passers-by.

11. If working overhead, install warning devices to prevent passage of people, equipment, and vehicles under the work area.

Overhead Maintenance Work

1. Whenever planned overhead maintenance operations occur, the area below the work should be roped off and signs indicating “Work Overhead/Do Not Enter” should be posted.

2. When overhead maintenance work must be performed with people below such as in an emergency, special tool holder belts should be used with each tool tied to the belt. The belts and tools are stored on the catwalk. Portable solid work area screens with toe boards also must be used, when necessary, to catch parts.

Work on Sewer Drains

1. Use confined space procedures for manholes.

2. Flush drains if possible.

3. Wear gloves, boots, and splash goggles.

4. Be cautious of sharp objects in the drain.

Refrigerant Gases—Nitrogen

In poorly ventilated rooms, leaks involving these gases can cause suffocation by reducing oxygen available for breathing. There is no warning (no odor, color, etc.). Therefore, make sure outside air is available if possible. Be aware of this hazard should you begin to have breathing problems in mechanical rooms with refrigerant gases or nitrogen.

Adjusting/Replacing Sports Field Lights

1. Two employees, one on the ground, with radios are required.

2. A portable ladder will be used to reach the pole ladder.

3. A body harness and two lanyards will be needed.

4. The person ascending the light pole should first connect to the safety cable all the way up, and then, at the top, connect to the structure before disconnecting the safety cable lanyard.

5. While descending, the reverse procedure should be used.

6. Do not perform this job on days of strong winds.