

## **Section 18: LOCKOUT/TAGOUT CONTROL OF HAZARDOUS ENERGY**

### **INTRODUCTION**

Lockout/tagout is a way to make sure electricity or other energy is not turned on or released while someone is servicing or maintaining machines and equipment, including piping systems. Other energy includes mechanical, hydraulic, pneumatic, chemical, thermal, and gravity. Release of uncontrolled hazardous energy can result in serious injury or death.

### **APPLICABILITY**

This program establishes the minimum requirements for the lockout/tagout of machines and equipment, as defined by Washington Administrative Code (WAC) 296-803. It shall be used to ensure that machines and equipment are isolated from all potential energy sources and locked out and/or tagged out before employees perform servicing or maintenance activities where the unexpected energization, start-up or release of stored energy could cause injury.

### **RESPONSIBILITIES**

Each department is responsible for identifying all machines or equipment that require the use of a lockout/tagout procedure before any service or maintenance is performed. Specific protocols for machines and equipment must be prepared before service or maintenance.

Supervisors and employees shall ensure that all equipment is locked out or tagged out to protect against accidental or inadvertent operation that could cause injury. Do not attempt to operate any switch, valve or other energy-isolating device when it has been locked or tagged out.

All supervisors shall ensure that their employees affected by this procedure are trained. Retraining will be required for authorized and affected employees when there is a change in job assignment, machine/equipment change, a change in energy control procedures, or deviations in the use of energy control procedures or programs.

The Safety and Claims Management office can provide and document training.

### **TRAINING**

Persons servicing or maintaining machines and equipment, as well as persons affected by those actions, shall be trained in these procedures.

Each employee participating in activities of lockout/tagout shall be trained in the

safety significance of the lockout/tagout procedure. All affected new or transferred employees and other employees whose work operations are or may be in the area shall be trained in the purpose and use of the lockout/tagout procedure.

## **DEFINITIONS**

**Affected employee** - Any person whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout or tagout, or whose job requires him/her to be in an area potentially influenced by the servicing or maintenance being performed.

**Authorized/designated individual** - An individual who is trained, qualified, and authorized by management to perform a specific assignment. This authority and responsibility includes deactivating and locking or tagging out equipment and/or systems, in compliance with WAC 296-803 and this Lockout/Tagout Program, when servicing or maintenance activities could create exposure for the authorized person or other affected employee(s).

**Capable of being locked out** - An energy-isolating device is capable of being locked out if it has a hasp or other attachment to which, or through which, a lock can be affixed, or it has a locking mechanism built into it. Other energy-isolating devices are capable of being locked out if lockout can be achieved without the need to dismantle, rebuild, or replace the energy-isolating device or permanently alter its energy control capability.

**Energized** - Connected to an energy source or containing residual or stored energy.

**Energy-isolating device** - A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: A manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a slide gate; a slip blind; a line valve; a block; and any similar device used to block or isolate energy. The term does not include a push button, selector switch, remote control switches, automatic circuit activating devices, and other control circuit type devices.

**Energy source** - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy, including gravity.

**Lockout** - 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.

**Lockout device** - A device that utilizes a lock, either key or combination type, to hold an energy isolating device in the safe position.

**Servicing and/or maintenance** - Work activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning, or clearing of machines or equipment, and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment, or release of hazardous energy.

**Tagout** - The placement of a tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed.

**Tagout device** - A prominent warning device, such as a tag and a means of attachment, which can be securely fastened to an energy isolating device in accordance with an established procedure, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tagout device is removed in accordance with approved procedures.

## **GENERAL LOCKOUT/TAGOUT REQUIREMENTS**

1. Before an employee performs any repair, maintenance or adjustment on any equipment or utility where unexpected energizing, start up, or release of stored energy could occur, the energy source must be isolated/rendered inoperative and then locked and tagged out in that position.
2. If an energy isolating device is not capable of being locked out, the authorized servicing person shall utilize the tagout system.
3. Whenever major replacement, repair, renovation, relocation, or modification of machines or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices for such machines or equipment shall be designed to accept a lockout device.
4. The unauthorized removal of the tag, or the operation or use of equipment or machines which have been tagged out, is cause for disciplinary action.

## **PREPARATION FOR LOCKOUT/TAGOUT**

A survey of each affected area must be completed prior to implementing the locking and tagging out procedures to identify all switches, valves, controls or other energy isolating devices that may need to be locked or tagged out. More than one energy source may be involved and in need of identification. A re-inspection of these controls or energy sources shall be done at least annually to

ensure that the procedures and requirements of this program are met. Both initial and re-inspections shall be documented. A copy of this report will be forwarded to King County's Safety and Claims Management office. A blank report is included in Attachment 1. This report shall include:

1. Identity of the machine or equipment
2. Location
3. Type of energy involved
4. Job title of employees authorized to lockout/tagout equipment
5. Job title of employees affected by lockout/tagout
6. Isolation method
7. Isolation Location

### **LOCKOUT/TAGOUT TAG**

Tags must be used for both lockout and tagout only. The tag will be completed and installed by authorized lockout/tagout personnel. Tags shall meet the following standards:

1. The tag shall be of a durable material and shall identify by name, the person applying the tag and date.
2. The tag shall warn against hazardous conditions and include a legend such as: "Do Not Start", "Do Not Operate", or other such warnings.
3. The tag will be completed and installed by the authorized locking or tagging out person.
4. Tags shall be used in conjunction with locks wherever possible. Each lock should have only one key that remains in the possession of the employee using the lock.
5. Tags and lock out devices shall be standardized.
6. Tags and locks shall be of substantial strength to prevent removal without the use of excessive force.

## **LOCKOUT/TAGOUT PROCEDURES**

Whenever a tag is used to tag out equipment or machines, the following procedures will be followed:

1. Notify all affected employees that a lockout/tagout system is going in effect and the reason. The authorized employees shall know the type and magnitude of energy that the equipment or machine uses and understand the hazards presented.
2. If the equipment or machine is operating, shut it down by the normal stopping procedures.
3. Operate the switch valve or other energy-isolating device so that the equipment is isolated from its energy source. Stored energy such as in springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam, or water pressure must be dissipated or restrained by repositioning, blocking, bleeding, etc.
4. Lockout/tagout the energy-isolating device with assigned individual locks/tags.
5. After ensuring that no personnel are exposed, operate the normal operating control to make certain the equipment will not operate.  
CAUTION: Return operating control to the "off" or "neutral" position after the test.

The equipment or machine is now locked out or tagged out and service or maintenance may begin.

## **RESTORING EQUIPMENT OR MACHINES TO NORMAL OPERATIONS**

1. After servicing or maintenance is complete and the equipment is operationally intact and ready for normal operations, check the area around the equipment to ensure no one is exposed to the hazard of restart. All affected employees are notified that the lockout device has been removed.
2. After all tools have been removed from the equipment or machine, the guards reinstalled, and employees are clear, remove all lockout/tagout devices. Operate the energy-isolating device to restore energy to the equipment or machine. Ensure the equipment or machine is operating correctly as specified by the manufacturer.
3. Each lockout or tagout device shall be removed from each energy-isolating device by the employee who applied the device. Exception: When the authorized employee who applied the lockout or tagout device is not

available to remove it, that device may be removed by the supervisor of the authorized employee if:

- A. The supervisor verifies that the authorized employee who applied the device is not at the facility.
- B. A reasonable effort has been made to contact the authorized employee regarding the removal of the lockout/tagout device.
- C. The removal of locks and/or tags is accomplished by an approved supervisor trained in lockout/tagout practices and following procedures 1 and 2 above.
- D. The authorized employee is informed that the device was removed when he/she returns to the facility before they resume job functions.

### **PROCEDURE INVOLVING MORE THAN ONE PERSON**

In the preceding steps for lockout/tagout, if more than one person is required to lockout/tagout equipment, each shall place their own personal lockout/tagout devices on the energy-isolating device. When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout/tagout device (HASP) may be used. If lockout is used, a single lock may be used to lockout the equipment or machine with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will use their own lock to secure the box or cabinet. As each person no longer needs to maintain their lockout protection, that person will remove their own lock from the box or cabinet.

### **PROCEDURE INVOLVING SHIFT OR PERSONNEL CHANGE**

When lockout/tagout procedure is in use and overlaps a shift change or a change in personnel performing the job task, the oncoming employee will apply their own lockout/tagout device at the lockout position on the equipment or machine if possible prior to the removal of the device of the off going employee. Both employees must be present at the lockout/tagout change. The off going employee will strike his/her name from the warning tag check list and the oncoming employee will place his/her name on the warning tag check list. All other procedures remain the same.

### **OUTSIDE PERSONNEL**

1. Whenever outside personnel, such as contractors, are to be engaged in activities covered by this program, the King County employee and the outside employer must inform each other of their respective lockout/tagout procedures.

2. The outside employer must ensure that all outside personnel comply with all requirements of King County's lockout/tagout procedures.
3. Deviations from the King County's control program are not permissible without specific prior approval.

### **PERIODIC INSPECTION**

The supervisor or designee will conduct a periodic inspection of the energy control procedures at least annually to ensure that the procedures and requirements of this program are being followed.

- The inspection will be performed by an authorized employee other than the persons using the energy control procedure being inspected.
- The inspection and follow up action will identify and correct any deviation or inadequacies observed.
- The inspection will include a review of energy control procedures used by authorized employees for specific lockout/tagout of equipment or machines serviced, maintained or repaired by the employee.

All inspections will be documented by written report. A copy of the report will be forwarded to King County's Safety and Claims Management office, ADM-ES-0500. The report shall include:

- identity of the machine or equipment
- date of inspection
- employees included in the inspection
- the person performing the inspection.





Example 1

Date: \_\_\_\_\_

Dept./Div.: \_\_\_\_\_

EQUIPMENT TYPE	LOCATION (ADDRESS, BUILDING OR ROOM)	ENERGY HAZARD (TYPES OF POWER)	ISOLATION METHOD	ENERGY ISOLATION LOCATION	AUTHORIZED EMPLOYEES (JOB TITLE)	AFFECTED EMPLOYEES (JOB TITLE)
Welding shop exhaust fans	Welding shop	120 Volts Rotating fan blades	Tagout	Switch box on west wall near door	Welder Electrician	Welder Electrician
2 heater fans	Welding shop near ceiling	208 Volts Rotating fan blades Hot heating elements	Lockout & Tagout	Switch box adjacent to heater	Electrician HVAC Engineer	Welder Electrician HVAC Engineer
Arc Welder	Shop Area	208 Volts	Lockout & Tagout	North wall, middle of shop	Electrician Welder	Electrician Welder