

## **104 Lock Out / Tag Out Procedures**

### **Purpose**

This covers the operation, servicing, and maintenance of machines and other energy sources or when responding to incidents involving machines and other energy sources, when start-up or release of energy could cause injury to personnel.

This program is designed to give East County Fire and Rescue personnel knowledge and guidelines to follow for Locking and Tagging devices which may cause injury or death due to start up while maintenance and servicing is done or during an emergency incident. This program was developed to comply with the *Washington Administration Code 296-803*.

Work done on or around any hazardous energy source must be done with strict adherence to the following procedures and **no** work shall be performed contrary to these procedures.

Definitions:

*Lock out* –Energy isolation process by means of a padlock or other mechanical device(s).

*Tag-out* – Process of placing identification tags and other “permit” processes to indicate actual persons involved with any form of energy isolation action for the protection of preventing injury to personnel and/or other persons.

### **Types of Hazardous Energy**

The hazardous energy types are electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, and stored energy of any combinations of energy. All types of energy may be encountered at different locations and facilities within response areas of East County Fire and Rescue.

## **PROCEDURE PROVISIONS**

All persons, upon observing a machine or piece of equipment which is locked out shall not attempt to start, energize, or use that machine or equipment. All personnel are required to comply with the restrictions and limitations imposed upon them during the use of lockout/tag out. Even if victim rescue is necessary, it is the responsibility of ECFR personnel to ensure the energy isolation steps are completed prior to performing rescues and/or medical treatment.

The following step by step lockout procedure should be followed to protect any persons while working on or around equipment. If on-site employees at an incident site have already locked out /tagged out machinery or equipment, then one of ECFR's lockout devices should be added to the lock tree with the keys secured with the Incident Commander or in a designated lock box.

In the event equipment is not equipped for lockout capability **and** cannot **in any way** be locked out, refer to Tag out Procedures following this section. Locks and Tags shall be supplied by East County Fire and Rescue. If a rescue is ongoing in an area where LOTO is required, then an agency representative shall be posted at the energizing point (i.e. panel, valve etc.) to ensure equipment is not tampered with or energized. Only the Incident Command of the incident shall be authorized to instruct that person to allow changes or have equipment energized, or de-energized.

## **INSTRUCTIONS**

**WHEN ANY EQUIPMENT IS LOCKED OUT, IT MUST ALSO BE TAGGED! REFER TO TAG OUT PROCEDURES LOCATED AFTER THIS SECTION FOR PROPER TAGOUT REQUIREMENTS. MAKE SURE TO GO TO LOCKOUT/TAG OUT BOARD, WHERE LOCKED OR TAGGED EQUIPMENT BELONGS, AND COMPLETE THE REQUIRED INFORMATION. INFORMATION REQUIRED SHOULD INCLUDE YOU NAME, OFFICER'S NAME AND THE DATE AND TIME YOU LOCKED AND TAGGED IT.**

**BEFORE ANY EQUIPMENT IS LOCKED OUT, IT SHOULD BE CLEAR AS TO WHICH MACHINE OR EQUIPMENT IS BEING TAKEN OUT OF OPERATION. THIS SHALL BE DONE BY INSISTENT CONSULTATION OF THE FACILITY'S "RESPONSIBLE PERSON" PER WAC**

**296-24-110. TO INSURE THAT ALL OTHER SOURCES OF ENERGY ARE RECOGNIZED IN THIS PROCEDURE WE MUST LOCK AND TAG THEM. IF A SECONDARY ENERGY SOURCE SHOULD BE LOCKED OUT ALL TAGS SHOULD STATE THAT THERE IS A SECONDARY ENERGY SOURCE BEING LOCKED OUT. THIS GOES FOR THE SAME IF THERE IS THREE, FOUR, AND SO ON. ALL TAGS MUST STATE THE NUMBER OF ENERGY SOURCES THAT GO TO THAT PARTICULAR MACHINE/EQUIPMENT BEING WORKED ON. ALL POWER SUPPLIES SHOULD BE LOCKED OUT SEPARATELY.**

**TURN OFF ALL POINT OF OPERATION CONTROLS. DISCONNECT SWITCHES SHOULD NEVER BE PULLED WHILE UNDER LOAD BECAUSE OF THE POSSIBILITY OF ARCING OR EVEN EXPLOSION. HIGH VOLTAGE DISCONNECTION OF ELECTRICAL, PNEUMATIC, LIQUID, AND HYDRAULIC OR AIR CONTROL VALVES AND SWITCHES SHALL BE COMPLETED BY AN AUTHORIZED “RESPONSIBLE PERSON” INSIDE MANUFACTURING FACILITIES. NOTE: SOME EXAMPLES OF ENERGY ISOLATION SWITCHING REQUIRES EXPERTISE KNOWLEDGE. I.E. ELECTRICIANS, PIPEFITTERS, SYSTEM OPERATORS ETC. TURN MAIN POWER CONTROLS TO “OFF”. AFTER MAIN POWER IS OFF, THE PERSON OR PERSONS WHO WILL BE INVOLVED IN THE INCIDENT MUST SECURE THEIR LOCK(S) ON THE CONTROL LEVER OR ON A MULTIPLE LOCK ADAPTER. ANY TIME A LOCK IS ATTACHED, IT IS MANDATORY TO TAG THE LOCK AND DESCRIBE THE TYPE OF WORK BEING PERFORMED, DATE AND TIME OF SHUTDOWN, PERSON(S) PERFORMING WORK, AND THE NAME OF THE SUPERVISOR CONTACTED ON THE LOCKOUT PROCEDURE.**

**TRY TO ENGAGE THE POWER WITH LOCK IN PLACE TO ENSURE THE POWER CANNOT BE MOVED TO “ON”.**

**TEST THE MACHINE CONTROLS BY UTILIZING A COMMUNICATED “TEST START” TO MAKE SURE POWER IS REALLY OFF. INSPECT POWER AT MACHINE CONTROLS. EQUIPMENT MAY HAVE MORE THAN ONE POWER SUPPLY, BE HOOKED TO ALARM SYSTEMS WITH CONSTANT POWER SUPPLIES, OR BE IN SERIES WITH ANOTHER UNIT’S CONTROL POWER. NOTE, UNDER RESCUE CIRSTUMSTANCES CONSULATION SHOULD BE IMMEDIATELY BE MADE BY FACILITY STAFF AND/OR A TECH RESCUE TEAM MEMBER/OFFICER.**

**AFTER ENSURING ALL POWER SUPPLIES ARE LOCKED OUT, ANY HYDRAULIC, PNEUMATIC, OR OTHER FLUID LINES SHALL BE BLED, DRAINED, PURGED, OR BLOCKED OFF TO ELIMINATE PRESSURE AND/OR CONTENTS. MECHANISMS UNDER SPRING TENSION OR COMPRESSION SHALL BE BLOCKED, CLAMPED, OR CHAINED IN POSITION. BLOCKS MAY ALSO BE NEEDED ON SOME MACHINERY OR EQUIPMENT TO PREVENT GRAVITATIONAL MOVEMENT. TAG BLOCK TO INSURE THAT THEY WON'T BE MOVED OR LOCK OUT IF NECESSARY.**

**RECORD THE TYPE OF WORK BEING PERFORMED, DATE AND TIME OF SHUTDOWN, PERSON PERFORMING WORK, AND CAPTAIN'S NAME ON LOCKOUT/TAGOUT BOARD LOCATED IN YOUR AREA. IT IS ESSENTIAL THAT THIS INFORMATION BE RECORDED BEFORE STARTING WORK ON OR AROUND EQUIPMENT.**

**AFTER ALL OF THE PREVIOUS STEPS HAVE BEEN ACCOMPLISHED, WORK MAY BEGIN ON OR AROUND THE EQUIPMENT. IF ENERGY IS NEEDED TO TEST OR POSITION THE EQUIPMENT, FOLLOW THE FOLLOWING STEPS IN REMOVING LOCKOUT/TAGOUT DEVICES BEFORE TURNING ON POWER. FOLLOW ALL LOCKOUT STEPS TO TURN OFF POWER BEFORE RESUMING WORK ON EQUIPMENT.**

**THE MACHINE OR EQUIPMENT AREA SHALL BE CLEARED OF ALL NONESSENTIAL ITEMS TO PREVENT MALFUNCTIONS, OR OTHER HAZARDS, WHICH COULD RESULT IN INJURIES. CHECK AND ADJUST, IF NECESSARY, ANY VALVES OR OTHER RELATED ITEMS YOU MAY HAVE CHANGED OR REROUTED.**

**UPON COMPLETION OF INCIDENT THE EMPLOYEE MUST CONTACT THE INCIDENT COMMANDER OR OFFICER OR (DESIGNEE IN ONE OF THOSE POSITIONS) TO APPROVE THE REMOVAL OF ANY LOCKOUT/TAGOUT DEVICE.**

**BEFORE RE-ENERGIZATION, ALL EMPLOYEES IN THE VICINITY OF EQUIPMENT SHALL BE SAFELY POSITIONED OR MOVED FROM THE AREA, AND THE AFFECTED EMPLOYEES SHALL BE NOTIFIED THAT THE LOCKOUT/TAGOUT DEVICES HAVE BEEN REMOVED.**

**IF AN INCIDENT CONTINUES INTO THE NEXT SHIFT, THE EMPLOYEES LEAVING THE JOB SHOULD NOT REMOVE THEIR LOCKS UNTIL THE INCIDENT COMMANDER IS INFORMED AND EMPLOYEES FROM THE NEXT SHIFT INSTALL THEIR LOCKS OR OBTAIN KEYS FROM PREVIOUS SHIFT (AFTER IC APPROVAL). EACH EMPLOYEE ON**

**NEW SHIFT MUST INSPECT EQUIPMENT TO VERIFY ZERO ENERGY STATE BEFORE BEGINNING ACTUAL WORK ON OR AROUND THAT PIECE OF EQUIPMENT.**

**NO EMPLOYEE WILL UNLOCK OR REMOVE ANY LOCKOUT/TAGOUT DEVICE WITHOUT APPROVAL FROM THE INCIDENT COMMANDER, OR DESIGNEE. SUPERVISORS MUST ALSO BE INFORMED WHEN INFORMATION ON LOCKOUT/TAGOUT BOARD IS REMOVED UPON COMPLETION OF WORK ON OR AROUND EQUIPMENT.**

**IN THE EVENT AN EMPLOYEE LEAVES A LOCKOUT/TAGOUT DEVICE ON A PIECE OF EQUIPMENT BY MISTAKE, (I.E., EMERGENCY, ILLNESS, ETC.), THE ONLY PERSON(S) PERMITTED TO REMOVE THAT DEVICE IS THE INCIDENT COMMANDER OR DESIGNEE, WHO WILL DO SO ONLY AFTER A COMPLETE INVESTIGATION TO DETERMINE THAT EVERYONE IS CLEAR OF THE MACHINE AND WORK HAS BEEN COMPLETED.**

**PLUG AND CORD CONNECTED EQUIPMENT DOES NOT HAVE TO HAVE A LOCKOUT/TAGOUT DEVICE AS LONG AS THE PLUG IS UNDER EXCLUSIVE CONTROL OF THE EMPLOYEE DURING THE INCIDENT. THE PLUG MUST EITHER BE IN THE PHYSICAL POSSESSION OF THE EMPLOYEE OR ALWAYS WITHIN ARM'S REACH AND IN THE LINE OF SIGHT OF THE EMPLOYEE.**

## **TAGOUT PROCEDURE**

### **PROCEDURE PROVISIONS**

The Tag out Procedure **must** always be followed whenever any Lockout Procedures are performed. Tag out Procedures by themselves should only be done if there is no other tangible way an item can be locked out. Prior to “Tagging Out” equipment; follow the steps shown in the preceding Lockout Procedures:

In addition to the lockout steps, the following Tag out Procedures must also be performed.

### **INSTRUCTIONS**

Tag out devices shall indicate the identity of the person applying the device. The name on the tag shall be legible to all.

Tag out devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations will not cause the tag to deteriorate or the name on the tag to become illegible.

Tag out devices, including their means of attachment, shall be substantial enough to prevent inadvertent or accidental removal. Tags must be securely attached by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds. Have the general design and basic characteristics of being at least equivalent to a one-piece, all-environment-tolerant nylon cable tie.

Lockout and Tag out devices shall be standardized within the facility in at least one of the following criteria: Color, shape, **or** size, **and additionally**; in the case of tag out devices, print and format shall be standardized. Tags must not be bypassed, ignored or removed without proper notification.

Remember that tags are warning devices **only** and do not provide the physical restraints of a lock. This may evoke a false sense of security.

## **Lockout/Tag out—Don'ts – (Information Only)**

Pulling fuses is no substitute for locking out. A pulled fuse is no guarantee the circuit is dead; and even if it was, there is nothing to stop someone from replacing the fuse.

Pulling fuses can be done in conjunction with locking out, but does not replace the mandate for lockout.

Locking out one source of power may not be enough. Many pieces of equipment use a combination of power supplies. Items that have a known combined power supply should be marked with a red dot on the outside of the item, but **do not** assume there is not a combined supply of power if a red dot is not present.

Intermittently operating equipment, such as pumps, fans, compressors, etc., may seem harmless when they are dormant. Don't assume this equipment won't start operating again.

Don't assume a job is too small to merit locking out. Yielding to the temptation to bypass lockout procedures because they seem to be an unimportant nuisance can cost someone their life.

Never place a lock where the disconnect can be bypassed at other locations.