Lockout Tagout (LOTO)

Summary

In order to assure all general industry employees throughout the country are protected from equipment accidentally operating during maintenance and servicing, the Occupational Safety and Health Administration (OSHA) has required a Lock-out/Tag-out Standard 29 CFR 1910.147. **OSHA requires annual training in Lock-out/Tag-out and immediate training for new employees. OSHA additionally requires an annual audit of the Lock-out/Tag-out program by local management or their delegates; the BT Lock-Out/Tag-Out Audit Checklist is used for this purpose.**

This policy covers the servicing and maintenance of machines and equipment in which the unexpected energizing or start-up of the machines or equipment, or the release of stored energy could cause injury to employees or others. It establishes minimum performance requirements for the control of such hazardous energy.

Lock-out/tag-out procedures must be followed by Building Technologies employees during servicing and/or maintenance. This policy applies when employees are required to remove or bypass a guard or other safety device, or an employee is required to place any part of their body in a danger zone around machinery or equipment.

Lock-out/tag-out procedures must also be used if there is a risk of water or other flowing material engulfing or endangering an employee. This policy does not apply to work on cord or plug connected equipment which is unplugged and under control of the employees.

The hazardous energy sources which require lock-out/tag-out must be recognized by all employees so they can protect themselves. These energy sources include electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.

Other employees whose work is in or may be in an area where lock-outs/tag-outs are used must know the procedure and prohibition concerning starting locked or tagged equipment. When tag-out systems are used, they are to be aware of the following limitations of tags:

A) Tags are warning devices and do not provide physical restraint.

B) Tags must not be removed without authorization of the authorized person using it, and never be bypassed, ignored, or otherwise defeated.

C) Tags must be legible and understandable to be effective.

D) Tags and their means of attachment must withstand their environment.

E) Tags may evoke a false sense of security and must be understood as part of an overall program.

F) Tags must be securely attached (able to withstand 50 lbs. of force).

All office, shop, warehouse facilities, and fixed facilities must be evaluated on an annual basis by the Location Manager to determine which equipment requires a LOTO procedure.

The Location Manager must ensure a written procedure is developed for each piece of equipment identified. The BT Lock-Out/Tag-Out Procedure Form is used to document these procedures. Until a written equipment-specific procedure is in place at the location, no work requiring LOTO may be performed. OSHA requires a documented procedure for each machine or device involved in lock-out/tag-out.

Employees must treat all conductors and parts of electrical equipment that have been de-energized, but not locked or tagged out, as live parts. See the BT Electrical Live Work Policy for restrictions on "live work."

1.1 Lock-Out Procedure

Building Technologies employees who perform work covered by these written procedures must be familiar with the equipment involved and determine the energy sources that will be encountered. The equipment must be shut down in a safe, orderly manner, and the devices (switches, valves) operated to isolate the energy sources.

The authorized employee places their personal safety lock on the main switch that has been pulled into the "off" position or control valve that has been closed.

A tag marked with the employee's name and company name is also affixed to the piece of equipment. The

authorized employee verifies the equipment is inoperative by attempting to cycle it.

A safety lock must be locked in place and tested to be sure it is latched (“Try-out”). This is done to ensure that the safety lock cannot be removed by other employees and power or utilities restored while the equipment is being worked on. The key for the safety lock must be removed from the lock by the authorized employee and placed in a safe place not easily accessible by other employees.

If more locks are needed than what has been supplied, the employee contacts their supervisor. If there are any switches or operating devices that cannot be locked out for the safety of the employee, the supervisor is consulted. Tag-out procedures (tag only) may only be authorized by the supervisor, once verification that no possibility of mechanical locking exists.

When locking hydraulically or pneumatically activated equipment, these additional precautions must be taken:

A) Check the hydraulic unit to make certain the pump is not operating. Make a visual check of the pressure gauge.

B) Before breaking any lines, bleed the pressure from all lines and units. Immediately close back all pressure relief devices after bleeding, even if subsequent bleeding may be deemed necessary (this is to avert an accidental harmful release of pressure in the case where an employee may forget to reclose bleeder device).

C) Check the hydraulic system to see if it has an accumulator. If it does, consider how to relieve pressure or isolate this energy source in the lock-out.

D) Before disconnecting any lines, place a cloth over the fitting to be disconnected and hold it there as the fitting is bled. Any pressure discharges harmlessly to the cloth or the floor.

E) Block any rams on cylinders or other moving parts (physically), so they do not move when the system is drained.

All switches, valves, or control points between the one locked out and the equipment must be in the "OFF" position so when the power or utility is restored, no damage is done by auxiliary control points in an "ON" position.

No person except the authorized person who placed the safety lock/tag on the equipment can remove it (see exception case below).

In the case of group lock-out/tag-out, an overall "Person-in-Charge" of the group lock-out/tag-out is selected. In this case, all other employees involved in the lock-out/tag-out become "Affected Employees" and follow the direction of the overall "Person-in-Charge."

Group Lock-Out/Tag-Out: If more than one individual is required to lock-out or tag-out equipment, each places their own personal lock-out device or tag-out device on the energy isolating device. Names and job titles of employees authorized for group lock-out or tag-out are

recorded by the Person-in-Charge on the BT Pre-Work Safety Log. (NOTE: The BT Pre-Work Safety Log may not apply to the US BT CPS facilities.) Where a lock-out/tag-out device is inadequate to accommodate a number of locks to provide protection for all employees working on equipment, utility or other lines, a multiple-locking device is provided at the point of the lock-out.

To insure proper adherence to the lock-out procedure, all switches, valves, and points of lock-out are plainly and accurately identified. The supervisor involved in and directing the work is responsible and becomes the "Person-in-Charge" for the proper designation of equipment to be locked out.

A supply of safety locks/tags are to be kept at each branch location.

When a job extends over the duration of more than one shift, the following procedure takes place:

A) The person responsible for the job ("Person-in-Charge") places the first lock/tag on the device being locked/tagged out.

B) All personnel working on the job place their locks/tags on the device at the direction of the "Person-in-Charge."

C) At the end of the shift, all personnel must remove their locks/tags with the exception of the responsible person ("Person-in-Charge").

D) Transfer of responsibility between shifts is accomplished by the outgoing responsible person

("Person-in-Charge") removing each of their locks/tags, which must be followed immediately by the incoming responsible person ("Person-in-Charge") placing each of their locks/tags on all devices.

E) The incoming responsible person ("Person-in-Charge") tries to activate all equipment that has been locked/tagged out to verify that equipment remains effectively locked/tagged out and is inoperative.

F) All incoming personnel involved in the job subsequently place their locks/tags on the equipment as directed by the incoming "Person-in-Charge."

In the event an employee fails to remove their safety lock before leaving the job, the individual or supervisor in charge ("Person-in-Charge") of the job must follow this procedure:

A) Verify the employee has left the job site.

B) Determine if the job is complete and equipment is ready to be put into service before removing the locks in question.

C) Make every reasonable effort to notify the person whose lock/locks is/are removed.

D) The safety lock/tag may be removed with an accompanying witness. The entire lock/tag removal process is documented in writing on the BT Pre-Work Safety Log and signed by the witness. The removed lock/tag must be held until it can be

returned to the affected employee (evidenced by documentation), or for a period of not less than one year.

In some cases, it is necessary for authorized employees to briefly remove their lock-out/tag-out devices to adjust equipment or components to complete repair work. All such cases must be approved in advance by the supervisor. There must be clear and positive communication between the persons removing the locks, those operating the equipment, and the person who will be performing the work. Ensure safe conditions exist before operating any equipment in this situation. Remove the lock-out/tag-out devices just long enough to perform the controlled testing or positioning. Immediately following the testing/positioning, de-energize the machine/equipment and re-apply the lock-out/tag-out device in accordance with the original lock-out procedure.

Safety locks are not to be used on personal lockers, cabinets, toolboxes, etc.

After the servicing and/or maintenance is complete and equipment is ready for normal operations, check the area around the machines or equipment to ensure no one is endangered. After all tools have been removed from the machine or equipment, guards have been reinstalled, and employees are in the clear, remove all lock-out or tag-out devices. Operate the energy isolating devices to restore energy to the machine or equipment.

At customer sites, employees must follow the client facility's Lock-out/Tag-out/Try-out program. **Employees**

must perform a "sanity check" on the client's procedures before lock-out/tag-out activities begin. Review this *BT Lock-Out/Tag-Out (Energy Control) Policy* when verifying that a client's procedure is acceptable.

OSHA requires that LOTO procedures are written and are machine/device specific. There must be a documented procedure for each machine or device involved in lock-out/tag-out. BT employees must review the client's written LOTO procedures for the equipment they are working on as part of the daily safety meeting, and this should be reflected on the BT Pre-Work Safety Log.

If the client does not have a written LOTO procedure for a particular piece of equipment, or their procedures are deemed inadequate, employees must STOP WORK IMMEDIATELY, and contact their supervisor to jointly develop an equipment specific LOTO Procedure that will effectively isolate the energy involved. This equipment specific procedure is to be documented on the BT Lock-Out/Tag-Out Procedure Form . The procedure form is to be reviewed, signed and authorized by the Employee's supervisor and the customer representative before starting work