

Hazardous Energy Control Plan

0206500_CP_11_13_en_A2.1

LOCK OUT/TAG OUT AND VERIFICATION

Purpose:

This plan is intended to establish the minimum requirements for the Lockout/Tagout of energy-isolation devices whenever maintenance or servicing is performed. This plan shall be completed prior to starting any work on projects that involve stored or residual energy and/or where the unexpected energization or release of stored energy could cause injury, such as Hydraulic, Pneumatic, Mechanical, Thermal, Vacuum, Gravity, Springs or Battery.

Additional Documents:

Request for Utility and Service Shutdown 0206500_CP_11_13_en_A5 may be required.

Instructions:

This plan shall be completed by a competent/qualified person operating in a safe manner. Fill in all blanks, attach all requested training documentation and return to the Project Superintendent or Project Safety Officer.

General Site Information: Outage Start Date: _____ Outage Finish Date: _____

Company Name: _____

Point of Contact: _____ Phone No.: _____

Lower Tier Company Name: _____

Company Project Name: _____

LOTO Description: _____

LOTO Personnel (Print Name): _____

Utilities Affected: Gas Water Steam Boiler Other _____

Emergency Response Training:

(1) Contact information: _____

(2) First Aid, Emergency Response and Resuscitation.

- (a) Employees responsible for responding to medical emergencies shall be trained in first aid and emergency procedures.
- (b) Employees responsible for responding to medical emergencies shall be trained in cardiopulmonary resuscitation (CPR).
- (c) Employees responsible for responding to medical emergencies shall be trained.
- (d) Training shall occur at a frequency that satisfies the requirements of the certifying body.

(3) Training Verification & Documentation

(Attach credentials to this plan)

Lock Out & Tag Out (LOTO):

Normal Operating Condition. Normal operation of equipment shall be permitted where a normal operating condition exists. A normal operation condition exists when all the following conditions are satisfied:

- (1) The equipment is properly installed.
- (2) The equipment is properly maintained.
- (3) The equipment is used in accordance with instructions included in the listing and labeling and in accordance with the manufacturer's instructions.
- (4) All equipment covers/valves, etc. are in place and secured.
- (5) There is no evidence of impending failure.

Notice: The phrase *properly installed* means that the equipment is installed in accordance with applicable industry codes and standards and the manufacturer's recommendations. The phrase *properly maintained* means that the equipment has been maintained in accordance with the manufacturer's recommendations and applicable industry codes and standards. The phrase *evidence of impending failure* means that there is evidence such as loose and frozen valves, bound equipment parts, visible damage or deterioration, etc.

Protection of employees and public

- 1) Warning signs and barriers shall be placed to keep out/away unauthorized personnel before starting the LOTO process.
- 2) Only authorized personnel will be permitted to access the area of the utilities to be locked out/tagged out. The authorized person's qualifications may vary due to the type of energy to be encountered.
- 3) Required PPE shall be worn at all times.
- 4) Be aware of hot and cold surfaces when handling valves/gates and other locking devices.

LOTO Steps:

- 1) Notify all affected personnel and/or employees where servicing/maintenance is required prior to disrupting any energy source.

Affected Personnel:

Method/s of notification:

- 2) Identify all sources of energy (stored or residual), the hazards involved and the method of control that are specific to the equipment being LOTO.

<u>Type of Energy</u>	<u>Hazard</u>	<u>Control</u>

- 3) After properly interrupting the load, pressure or flow, use approved valves/gates to shut down each energy source.

Equipment Used for Testing:

Test equipment/instruments must be selected based on the intended use and expected type of utility & conditions such as pressures and flows in the systems.

Make/Model: _____ Rating: _____

Note: Verify the test instruments operation before and after zero energy verification

4) **Verify all valves and gates of the devices are fully closed.**

5) **Engage energy isolating devices.** Verify that the device for LOTO cannot be removed or tampered with.

<u>Isolation Device</u>	<u>Location</u>
_____	_____
_____	_____

6) **Stored or residual energy must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.** Use adequately rated gauges or other rated devices to verify zero stored/residual energy.

<u>Type</u>	<u>Present</u>	<u>Method of Restraint</u>
Hydraulic	<input type="checkbox"/>	_____
Pressurized	<input type="checkbox"/>	_____
Vacuum	<input type="checkbox"/>	_____
Thermal	<input type="checkbox"/>	_____
Springs	<input type="checkbox"/>	_____
Gravity	<input type="checkbox"/>	_____
Capacitors	<input type="checkbox"/>	_____
Battery	<input type="checkbox"/>	_____
Others	<input type="checkbox"/>	_____

7) **Ensure the equipment is disconnected from the energy source(s)**, make sure no personnel are exposed, then verify the isolation of the equipment by attempting to start or operate the device or equipment through normal operating controls.

CAUTION: Return operating control(s) to neutral or OFF position after verifying the isolation of the equipment.

8) **LOTO/Zero Energy is verified complete.** Approved personnel may be allowed to enter the LOTO area and perform service/maintenance as required once this section is certified by the Authorized person.

*I certify that all sources of energy were verified de-energized through testing on this date, utilizing LOTO procedures prior to service/maintenance work beginning.

Authorized Person Signature

Date

Minimum PPE Requirements for LOTO & Verification of LOTO

- (1) Safety vest
- (2) ANSI Z87.1 Safety glasses or goggles
- (3) Hearing Protection (ear canal inserts)
- (4) Gloves for protection against what is being in countered such as heat, chemical, etc.
- (5) Hard hat
- (6) Leather footwear
- (7) Additional PPE may be required by the testing equipment as per the manufacture.
- (8) Additional PPE may be required for releasing of a product, note: SDS is required for products encountered before exposing worker to additional hazards.

Communication with Other Trades:

Notify all workers on the project site of LOTO operations in advance. Once a safe work condition is achieved and verified with the contractor (Subcontractor) performing the LOTO, the project personnel shall be notified that it is safe to enter the work area.

Additional Required Training:

Employees will be trained to understand the specific hazards associated with stored energy and the relationship between hazards and possible injury. Employees must have received specific training on:

- What hazards are presented by the specific job
- How hazards affect body tissues
- How to avoid exposure to hazards
- How to minimize risk by body positioning
- What PPE is needed for the employee to perform his/her work assignment
- How to select and inspect PPE
- What employer-provided procedures, including specific work practices, the employee must implement
- How increased duration of exposure increases the opportunity of injury
- How to perform a hazard/risk analysis
- How to determine prohibited boundaries

Pre-Job Requirements:

- Review diagrams, work orders, manuals
- Conduct pre-job briefing
- AHA completed/reviewed
- Inspect PPE

Utility Diagram Sketch Box

Initials: _____

Plan Approval:

Plan Author (sign): _____ Date: _____

Authorized Person (sign): _____ Date: _____

Plan Review:

PSO/Superintendent (Sign): _____ Date: _____