

# LOCKOUT TAGOUT (LOTO) LCP

## PURPOSE

This policy defines the Ecolab requirements for control of hazardous energy (Lockout Tagout). The application of this policy is intended to prevent injuries and manage the risk associated from the unexpected energization or startup of machinery and equipment, or the release of hazardous energy during service, maintenance and installation activities.

## SCOPE

This policy applies to all Ecolab global supply chain facilities and operations. It is applicable to all employees and supervised contractors. Third party contractors must comply with these Ecolab requirements when conducting work. In the event this policy conflicts with regional/local regulations, then the more stringent will apply.

This policy does not apply to new construction or equipment that is not yet connected to a process containing a chemical or energy source. This policy does not apply to equipment connected to a power source with a cord and plug, IF the hazardous energy is controlled by unplugging the equipment from the energy source AND the person carrying out the work has complete control of the cord and plug. (i.e. portable hand tools, etc.)

This policy does not apply to normal production operations if they are part of the standard operating procedures ***unless an employee is required to:***

- A. Remove or bypass a machine guard or safety device on operational equipment
- B. Place any part of his/her body into an area where operation of the equipment, release or contact with hazardous energy could cause harm or injury.

## RESPONSIBILITIES

### SITE LEVEL MANAGEMENT

- Establish LOTO program, including authorities and responsibilities for LOTO
- Ensure compliance with LOTO policy
- Ensure annual program audits and periodic inspections are conducted
- Ensure LOTO procedures are documented and maintained for all appropriate equipment and operations
- Provide necessary LOTO equipment and devices
- Provide necessary LOTO training
- Designate Authorized Employee(s) for LOTO
- Ensure LOTO is only conducted by properly trained and competent Authorized Employees or Contractors
- Communicate Ecolab's LOTO policy to applicable Contractors

### AUTHORIZED EMPLOYEE

- Comply with LOTO policy
- Obtain LOTO training and demonstrate competency
- Evaluate hazardous energy and carry out LOTO procedures

- Determine and notify Affected Employee(s) of the LOTO work and ensure they are not exposed to hazardous energy
- Apply locks and tags prior to the start of work AND remove locks and tags when work is completed
- Verify equipment is shut off and isolated from energy source
- Empowered to exercise “Stop Work Authority” for themselves or others if there is a failure to comply with any aspect of the LOTO requirements. Report the information to a Supervisor/Manager.

**AFFECTED EMPLOYEE**

- Comply with Ecolab’s LOTO policy
- Obtain necessary LOTO awareness training
- Comply with LOTO instructions from Authorized Employee
- Prohibited from removing an Authorized Employee’s lock or tag
- Empowered to exercise “Stop Work Authority” for themselves or others if there is a failure to comply with any aspect of the LOTO requirements. Report the information to a Supervisor/Manager.

**CONTRACTOR**

- Comply with all Ecolab requirements for LOTO.
- Ensure the necessary LOTO equipment/devices are provided for their own personnel
- Ensure personnel are trained and competent for LOTO.
- Determine and notify Affected Employee(s) of the LOTO work and ensure they are not exposed to hazardous energy
- Empowered to exercise “Stop Work Authority” for themselves or others if there is a failure to comply with any aspect of the LOTO requirements. Report the information to the Ecolab site contact.

**REQUIREMENTS**

The Ecolab LOTO program will address the steps necessary to control and isolate energy sources to prevent the release of potentially hazardous energy during service, maintenance or installation activities. (Refer to Appendix A) The program applies to all sources of energy: mechanical, electrical, hydraulic, pneumatic, chemical and thermal.

**The LOTO Program contains three elements:**

1. Written LOTO Procedures (Refer to Appendix B)
2. LOTO Training
3. Audits/Inspections

**LOTO Devices MUST**

- Be suitable to withstand the environment for the duration of the LOTO

- Be substantially constructed to minimize the likelihood of premature or accidental removal. Without the key, removal is only possible by excessive force (bolt cutters or other metal cutting tools)
- Be standardized (color, shape and/or size)
- Be labeled and resistant to deterioration– includes a marker for the identity of the Authorized Employee who applied the device
- Only have one key
- Only used for LOTO, and no other purpose
- New or replaced equipment must have the ability to be locked out

### LOTO Device Removal

- Only removed by the Authorized Employee who applied it
- Refer to Appendix C – for removal when the Authorized Employee is not on site and the LOTO device needs to be removed

### GROUP LOTO

- Local procedures are required for equipment that cannot accommodate multiple locks/tags and a group LOTO is necessary.
- A primary Authorized Employee must be designated with responsibility for the group LOTO.
- The primary Authorized Employee must be the first to apply their lock/tag and the last to remove their lock/tag for the group.

### Shift or Personnel Change

- If work continues beyond one shift, then the Authorized Employee of the new shift must install their LOTO before the out-going shift removes their LOTO.
- OR, the entire LOTO process must start over from the beginning

### PERMIT

There are no specific permits for LOTO. The LOTO work must be documented in the applicable permit for the task i.e. Safe Work Permit, Confined Space Entry Permit, Hot Work Permit, Electrical Permit.

### AUDIT

The LOTO program must be reviewed annually or when there is reason to believe the program may not protect employees. All deficiencies must be documented and corrected.

The annual review must include:

- A. Inspection of *each* Authorized Employee:
  - a. Observation of an actual LOTO. The purpose is to ensure that the requirements of the LOTO site procedure and the equipment specific procedures are being followed,
  - b. Must be documented (see Appendix D for an *example* Authorized Employee annual audit form),
  - c. Must be completed by a competent LOTO Authorized Employee *who is not part of* performing the current LOTO. Any Authorized Employee found

not following the LOTO procedure / equipment specific procedure must be re-trained and demonstrate competency

- B. Written LOTO procedure(s):
  - a. Verify content is up to date and provides for adequate worker protection
- C. LOTO program elements for adequacy and effectiveness:
  - a. Responsibilities for Authorized Employees
  - b. Review of responsibilities and limitations for tags only.
  - c. Training and competency
  - d. Program records
  - e. Review of the previous 12 months of LOTO incidents & applicable permits

## TRAINING

LOTO training must be specific for the site and applicable equipment. Initial training must be provided, and competency demonstrated prior to starting service, maintenance or installation of equipment. Refresher training is required for all Authorized and Affected Employees whenever there is a change in the following:

- Job Assignment
- New Machinery/equipment or new hazards
- Energy Control Procedures
- Skills/competency of Authorized or Affected Employees (based on the results of periodic inspections OR management knowledge of deviations/ inadequate work practice)

### Training Records Must Contain

- Employee Name and Instructor Name
- Date of Training
- Description / Content of Training

### Authorized Employee - Required Annual Training

- Hazardous energy resource recognition
- Type and magnitude of workplace hazardous energy sources
- Energy control procedures, including methods and means to isolate and control energy sources.
- Knowledge/skills for the safe application, use and removal of energy-isolation devices.
- Limitations of tags

### Affected Employee - Required Annual Training

- Purpose and use of energy control procedures
- Recognition of the LOTO procedure in use
- Importance of NOT tampering with LOTO devices and NOT starting or using equipment that is locked or tagged out
- Limitations of tags

## RECORDS

- List of Authorized Employees for LOTO.
- Program Annual Audits, Inspections and Training
- Written certification of annual inspection and training
- A record for the attempts to contact employees whose lock was required to be removed in their absence, and all associated documentation.

## DEFINITIONS

**Affected Employee:** A person, other than the Authorized Employee, whose job requires them to operate equipment, OR work in an area where servicing or maintenance of equipment is being performed under LOTO procedures

**Authorized Employee:** Local management, OR an employee who is assigned authority by local management to Lock Out OR Tag Out equipment for servicing, maintenance or activity involving hazardous energy. An authorized employee must know this standard, or equivalent requirements, and LOTO hazards

**Blind:** A device inserted into a pipe, which effectively blocks flow and pressure. (Also called slip plate, pancake, or block)

**Contractor:** Refers to a person or company that conducts work for Ecolab (under a service agreement or sub-contract) and are directly supervised by managers from the third party contracting company. Their work may be short or long term

**Employee:** Refers to all Ecolab employees and Ecolab contractors whose day-to-day activities are directly supervised by an Ecolab supervisor/manager

**Energy Isolating Device:** A mechanical device or method that physically prevents the transmission of energy. For example: a disconnect switch, a pipe line blind, removal of a fuse

**Life Critical Policy (LCP):** Refers to an Ecolab SHE policy in which failure to follow the requirements may result in serious injury or death

**Lockout:** The act of isolating energy sources as well as any residual energy during services and maintenance of machines or equipment. This ensures that the energy isolating device or the equipment being controlled cannot be operated until the lock is removed

**Lockout Device:** A device that securely holds an energy isolating device in the safe position, such as a padlock and hasp

**LOTO:** Lockout and Tagout

**Service and Maintenance:** Activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and servicing machines or equipment, also lubricating, cleaning, unjamming, and making tool changes

**Management:** The highest-level manager at an Ecolab site, OR any person designated by local management to serve as the highest-level manager at an Ecolab site

**Tagout:** The placement of a tag on an energy isolating device in accordance with this program to indicate that the energy isolating device and the equipment being controlled may not be operated until the tag is removed

<b>Revision</b>	<b>Date</b>	<b>Change</b>	<b>Revised by</b>	<b>Approved</b>
0	6-12-2013	New Ecolab Policy	K Stadnik	Regional SHE leads
1	08/08/2018	New Policy Format / Periodic Review	Regional SHE Leads	B.Ballard

## APPENDIX A

### GUIDELINES TO IMPLEMENT

#### A. Shut Off and Isolate the Equipment & Notify Employees of LOTO and Potential Hazards

Identify the method or device to use to isolate the equipment. Some methods and devices may include but are not limited to the following.

1. Disengage the disconnect switch.
2. Remove the fuse or circuit breaker.
3. Disconnect motor leads.
4. Disconnect pneumatic, steam, or hydraulic pipelines.
5. Block parts powered by springs or gravity.

6. Double block and bleed (two adjacent valves in a pipeline with an opened pressure relieving valve between them).
7. Blind the pipeline and cap or plug pipe fittings.

## **B. Lockout and/or Tagout Device Application**

1. Lockout
  - a. Each authorized employee exposed to the hazard must apply a lock to the lockout device. The employee who applies a lock must keep the key to that specific lock. Only one key is allowed.
  - b. Only use locks approved by local management on lockout devices.
  - c. Use a lockout device adaptor on equipment not designed for lockout.
  - d. The lock must CLEARLY indicate the identity of the employee by either their name or a unique number assigned only to that employee.
2. Tagout
  - a. Each authorized employee that may be exposed to the hazard must apply a tag to the lockout device in addition to a lock.
  - b. If the equipment cannot be locked out, then apply a tag only and take extra precautions such as but not limited to the following.
    - i. Remove and tag fuses or breakers.
    - ii. Block and tag the control switch.
    - iii. Open and tag additional disconnect devices.
    - iv. Remove valve handles and tag valves.
  - c. Tags must be attached as close as possible to the same point as where a lock would have been applied.
  - d. Only an easily identified and standardized tag approved by the site must be used, and it must be signed and dated.

## **C. Release of Energy**

All potential hazardous or stored energy must be relieved, disconnected, restrained and otherwise rendered safe.

1. Relieve pneumatic or hydraulic pressure, and if the pressure can rebuild, establish a means to verify that the pressure is not rebuilding.
2. If equipment has the potential to fall or move, block or secure the equipment to prevent its movement.
3. Consult equipment procedures for details on releasing hazardous energy.

## **D. Verify and Isolate**

Verify that all energy sources have been isolated from the equipment and de-energized without exposing employees to any hazards. Methods may include but are not limited to

1. Pushing the start button
2. Opening a bleed valve

## **E. Testing and Positioning**

If the equipment must be temporarily energized for testing or positioning, the following must be done.

1. Remove all tools and materials from the equipment area and verify that removal of the locks or tags is safe.

2. Inform affected employees and have them move a safe distance away.
3. Remove the locks and tags and proceed with testing or positioning.
4. When complete, shut off the equipment and re-apply locks or tags

#### F. Release from LOTO

After the work has been completed and the equipment is ready for normal operation, ensure that the following is carried out.

1. Re-install guards and remove tools.
2. Inspect the area for damage.
3. Inform affected employees that the equipment can be started up and ensure that no one is exposed to start up hazards.

#### G. Remove LOTO

1. Each employee must remove their lock or tag when they have completed their respective work.
2. The last employee to remove a lock or tag must notify the authorized employee directing the work activity that the equipment is ready for startup.
3. A lock or tag must only be removed by the employee who applied it. If the employee is not at the site when the lock needs to be removed, the following must be carried out:
  - a. Attempt to contact the employee and tell the employee to return to the site to remove the lock. If unsuccessful, record the attempt using Appendix C form.
  - b. Before removing the lock or tag:
    - i. Review the status of the job and reason for LOTO.
    - ii. Consult with employees affected by and involved in the LOTO.
    - iii. Inspect the equipment and job site and ensure that hazardous energy will not be released.
  - c. Only employees authorized by local management must remove the lock or tag. Before returning to work, the employee whose lock was removed must be informed of the lock or tag removal. (See Appendix C for an **example** release and notification form)

#### Group Locks

For equipment that cannot accommodate multiple locks or tags, the following alternative method or other effective method may be used.

1. A primary authorized employee must be assigned responsibility for the group LOTO procedure.
2. The primary authorized employee must place his lock and/or tag on the lockout device and place the key in a group lock box.
3. The primary authorized employee must determine which employees may be exposed to injury and have them apply personal locks to the lock box.
4. Each employee with potential exposure must inspect the equipment to verify that the equipment is locked or tagged then place his/her lock or tag on the group lock box.



5. Each employee must remove their lock from the group lock box when their work is done.
6. When all other locks have been removed, the primary authorized employee may remove his/her lock from the group lock box, obtain the lockout device key(s), and then remove his/her locks and tags from the lockout device(s).

#### **J. Contractors**

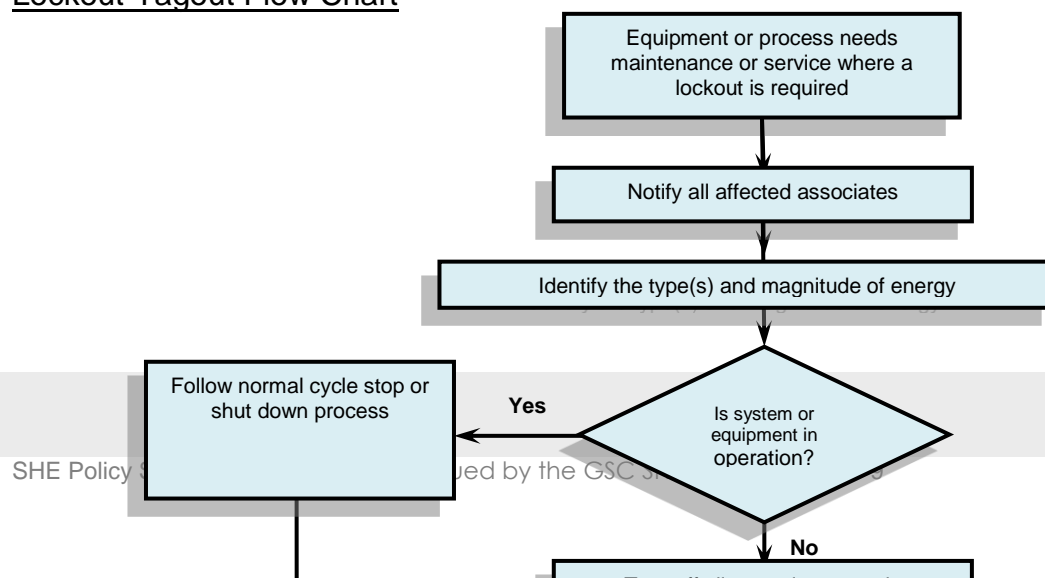
1. Contractors who may be exposed to hazardous energy must be informed of Ecolab LOTO requirements and are required to follow them unless another written procedure is used by the contractor, which complies with the requirements of the Ecolab procedure AND is approved by Ecolab local management.
2. Contractor employers must provide locks and tags to their employees.
3. Contractors who lockout or tagout equipment must be authorized employees and must be the first to place a lock or tag on a piece of equipment.
4. Affected Ecolab employees must be informed of contractors work and LOTO procedures, so they understand restrictions and prohibitions involved.

#### **K. Shift or Personnel Change**

When it is necessary for work to be continued beyond one shift and the maintenance, servicing, contractor, or operating personnel change, the authorized employees of the on-coming shift must install their locks/tags before the off-going shift removes their locks/tags or the entire lock out tag out process must start over from the beginning.

#### **L. New and modified equipment must be built to accept a lock out device.**

### Lockout-Tagout Flow Chart



### **APPENDIX A**

**Example LOTO Procedure Format**

**Note: Specific equipment may require its own LOTO procedure.**

1. Notify all affected employees of the shutdown and LOTO of equipment/systems, including any potential hazards.
2. Prepare for Shut-Down. Identify each energy source (to be controlled), their magnitude and the necessary method(s) to isolate them. Also identify other critical safety requirements.
3. Shut-Off / Isolate the equipment (include specific steps to shut down, isolate, block and secure equipment)
4. Lockout Tagout Device application (include specific steps in the safe placement of LOTO devices and identification of who has responsibility for these devices)
5. Release of Stored Energy. Identify all potential for stored or residual energy and how to dissipate (include specific steps for the safe release of stored energy).
6. Verification of each energy source isolation (include specific steps)
7. Testing/Positioning (include specific requirements for testing equipment to determine and verify the effectiveness of the LOTO devices and other energy control measures)
8. Prepare for Release of LOTO: Re-install guards, inspect area, remove tools (include specific steps to remove devices and identification of who has responsibility for these device removals)
9. Remove LOTO (include specific steps)
10. Inform Affected Employees

**REMOVAL OF A LOCKOUT / TAGOUT DEVICE IN THE ABSENCE OF THE AUTHORIZED PERSON WHO APPLIED IT**

If the authorized employee is not available to remove the lockout / tagout device(s), the device(s) may only be removed by another authorized user under the direction of the Plant Manager, or their designee. This form must be fully completed prior to the removal of the lockout / tagout device(s).

**1) If lock or tag is being removed by anyone other than the authorized user, indicate the date and time the Plant Manager, or his designee was contacted.**

**Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**2) Identify the employee whose device is being removed:**

**Name:** \_\_\_\_\_

**Job Title:** \_\_\_\_\_

**Location of Lock:** \_\_\_\_\_

**3) Describe all reasonable efforts made to locate the employee. (You may, for example have telephoned the employee's home or cell phone number.)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**4) Describe the action taken to ensure that prior to his/her resumption of work; the employee knows that his/her device was removed.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**5) Before lockout or tagout devices are removed and energy is restored to the machine or equipment, the remover must take or observe the following actions (check the box after each step is performed):**

- ☐ Inspect the work area to ensure that non-essential items have been removed and that machine or equipment components are intact and capable of operating properly.
- ☐ Check the area around the machine or equipment to ensure that all employees have been safely positioned or removed.
- ☐ Remove lockout / tagout device(s) and confirm it is safe to operate.
- ☐ Notify all affected employees before starting equipment or machines.

**6) Sign and date below.**

\_\_\_\_\_  
**Signature of Authorized Remover**

\_\_\_\_\_  
**Date**

**7) Forward this document to the EHS Manager for recordkeeping.**

## LOCKOUT / TAGOUT AUDIT LOG

All control of hazardous energy procedures must be audited by another authorized individual at least annually to ensure authorized users are following the procedure as intended. Deviations from procedures must be corrected immediately through refresher training and/or modifications to the procedure. All authorized employees must be audited annually on at least one control of hazardous energy procedure which they use. A statistically valid number of authorized employees must be audited on all procedures and all authorized employees should go through the process at least once every three years.

## 1) Name(s) of authorized personnel being observed:

Name: _____	Job Title: _____
Name: _____	Job Title: _____
Name: _____	Job Title: _____
Name: _____	Job Title: _____

## 2) Equipment / Machinery being locked out:

\_\_\_\_\_

## 3) Procedure name and/or number:

\_\_\_\_\_

## 4) Type(s) of hazardous energy sources to be controlled:

<input type="checkbox"/> Electrical	<input type="checkbox"/> Hydraulic	<input type="checkbox"/> Steam
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Pneumatic	<input type="checkbox"/> Radiation
<input type="checkbox"/> Chemical	<input type="checkbox"/> Thermal	<input type="checkbox"/> Gravity

## 5) Energy isolation device(s) to be used (i.e. disconnect switch, valve):

\_\_\_\_\_

## 6) Lockout device(s) to be used (i.e. locks, tags, hasp, group box):

\_\_\_\_\_

## 7) Summary of procedures (check off each line as work proceeds):

YES	NO	
<input type="checkbox"/>	<input type="checkbox"/>	1. Notify all affected workers.
<input type="checkbox"/>	<input type="checkbox"/>	2. Shut-off equipment normally.
<input type="checkbox"/>	<input type="checkbox"/>	3. Clear all personnel from work area.
<input type="checkbox"/>	<input type="checkbox"/>	4. Apply lockout / tagout device(s).
<input type="checkbox"/>	<input type="checkbox"/>	5. Check / test to ensure all energy has been neutralized.
<input type="checkbox"/>	<input type="checkbox"/>	6. Verify that all controls are in the "neutral" or "off" position.
<input type="checkbox"/>	<input type="checkbox"/>	7. Complete work.
<input type="checkbox"/>	<input type="checkbox"/>	8. Verify that all tools have been removed from within the work area.
<input type="checkbox"/>	<input type="checkbox"/>	9. Verify that all guards have been replaced.
<input type="checkbox"/>	<input type="checkbox"/>	10. Prior to restoring energy, notify all affected workers to stay clear.
<input type="checkbox"/>	<input type="checkbox"/>	11. Remove lockout / tagout device(s).
<input type="checkbox"/>	<input type="checkbox"/>	12. Restore power / energy and confirm it is safe to operate.
<input type="checkbox"/>	<input type="checkbox"/>	13. With all personnel clear, verify proper equipment operation.
<input type="checkbox"/>	<input type="checkbox"/>	14. Inform all affected workers that equipment has been returned to normal.

## 8) I certify that I have conducted a periodic inspection of the above lockout procedure and have determined that lockout procedures are being implemented as required:

\_\_\_\_\_  
Signature of Authorized Reviewer

\_\_\_\_\_  
Date

## 9) Forward this document to the EHS Manager for recordkeeping.