Lockout/Tagout Policy
TABLE OF CONTENTS

Page

3  Scope

3  Control of Hazardous Energy (Introduction)

3  Authorized Employee

3  Employer Responsibility

4  Tagout Devices

4  Lockout Devices

5  General Procedures

5  Plug, cord, and hose connected type equipment

5  Electrically powered equipment

6  Lockout tagout procedure

6  Outside Contractors

7  Appendix A  List of Authorized Lockout Individuals

8  Appendix B  List of Effected Employees and potential equipment

9  Appendix C  Energy source evaluation

10 Lockout Tagout kit inventory
Scope

This policy covers the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy could cause injury to employees. These procedures apply to all maintenance or installation operations conducted at Hope College facilities.

Control of Hazardous Energy (Lock-Out/Tag-Out)

The procedures specified in this section comply with the requirements for the isolation or control of hazardous energy sources set forth in the OSHA standard, (29 CFR 1910.147 proposed) and MIOSHA Part 85 Control of Hazardous Energy Sources. The accidental release of energy during, maintenance work can and frequently does cause severe injuries, amputations, and death. Energy can be present in the form of electricity, potential energy (due to gravity) stored in elevated masses, chemical corrosivity, chemical toxicity, or pressure.

The only exceptions allowed by OSHA to these requirements are those situations involving "hot tap" operations. For this exception to be valid, the Hope College personnel involved must demonstrate that the continuity of services is essential, that shutdown of the energy source is impractical, and that documented (written) procedures and special equipment have been implemented that will provide proven effective protection.

Authorized employee. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section.

Affected employee. An employee 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 work in an area in which such servicing or maintenance is being performed.

Employer Responsibility

MIOSHA requires that you plan for the control of energy during servicing and/or maintenance of machines and equipment by doing the following:

- Establish an energy control program
- Develop, document, and utilize lockout/tagout procedures
- Conduct periodic inspections.
- Provide appropriate training to employees
- Provide equipment required by the lockout/tagout procedures, at no cost to employees.
I. Tag-out Devices

Tags affixed to energy isolating devices are warning devices that do not provide physical restraint on those devices that a lock would provide. Any tag so attached to an energy isolating device must not be removed without authorization of the person attaching it, and it must never be bypassed, ignored, or otherwise defeated. Tags must be legible and understandable in order to be effective. Tags must be made of materials which will withstand environmental conditions encountered in the workplace. When utilized, tags must be securely attached to energy isolating devices so that they cannot be inadvertently or accidentally detached during use. Tag-out devices must be substantial enough to prevent inadvertent or accidental removal.

Tag-out devices must warn against hazardous conditions if the machine or equipment is energized and must include appropriate warnings such as:

DO NOT START
DO NOT ENERGIZE
DO NOT OPEN
DO NOT OPERATE
DO NOT CLOSE

2. Lock-out Devices

Lockout devices and practices vary by nature and function. Several effective lockout devices and practices are listed as follows:

a. Padlocks. Key operated padlocks are recommended and should be assigned individually and marked with the individuals own number.

b. Multiple lock adapters will enable more than one worker to place their own padlock on the isolating device. To guarantee that the machine or equipment will remain deactivated until each and every employee completes their own task, and only then will the last padlock be removed.

c. Chains or other commercially available devices should be used to prevent valves from being opened or, in some cases, closed. The principle of multiple lock adapters still applies even when chains or other devices are used on operations requiring more than one employee.
3. Procedures
   A. General

If energy-isolating devices are not capable of being locked out, they must be modified so that they are capable of being locked out whenever major replacement, repair, renovation, or modification of the machine or equipment takes place. Whenever new machines or equipment are installed, energy-isolating devices for such machines or equipment must be designed to accept a lockout device.

If an isolating device cannot be locked out for any reason then additional steps must be taken to assure full employee protection such as removing fuses, blocking switches, blanking off lines, etc.

If the machine or equipment is not capable of being locked out, a tag-out procedure must be documented and utilized. The tag-out procedure must provide full employee protection equivalent to a lockout system. For full employee protection, when a tag-out device is used on an energy-isolating device, the device must be attached at the same location that the lockout device would have been attached, and must demonstrate that the tag-out device will provide a level of safety that is equivalent to that of a lockout.

b. Plug/Cord and Hose-Connected Type Equipment

When servicing or installing plug/cord or hose connected electrical, pneumatic, or hydraulically powered equipment, the cord or hose shall be disconnected from the equipment to be worked on, prior to starting the work. A tag warning against reconnecting the plug or hose shall be affixed to the plug or hose end.

Any stored energy (e.g., capacitor voltage, hydraulic pressure) shall be safely released prior to the start of maintenance or installation work.

c. Electrically Powered Equipment

Electrically powered equipment shall be de-energized and their source of electricity manually disconnected from them prior to the removal of protective covers or the start of other maintenance or installation work. It is important to recognize that locking and tagging on/off switches is often not sufficient to prevent accidental start up or prevent voltage from being present in the equipment. If the equipment is not wired properly (i.e., the polarity is reversed) or the switch is of the single pole type, voltage can be present even if the operating switch is in the off position. For these reasons, manual disconnects must be placed in the off position and/or the equipment's power fuses removed from the motor control center.
The lock-out/tag-out procedure is as follows:

- Each person working, on the circuit or piece of equipment shall place a padlock and warning tag on the electrical, isolation device (e.g., disconnect switch).
- Each person working on the circuit or piece of equipment shall attempt, to energize or start the piece of equipment prior to starting work. Each on/off switch capable of energizing the equipment must be "tried." to verify that the device is de-energized.
- If the try step reveals that the equipment is capable of being energized, the proper disconnects must be located and locked out and the try step repeated.
- As each person completes his or her task, they shall remove their padlock and tag from the energy isolating, device.
- All protective covers or panels shall be securely, re-attached prior to energizing the equipment after work is completed. In the event that protective covers must be removed to make adjustments on energized equipment, appropriate guards must be constructed and attached in such a manner as to prevent employee contact with live circuitry capable of causing human injury. Such guards must be of durable construction, adequate to prevent injurious contact, and remain in place at all times that the equipment is energized.

Procedures DO NOT have to be documented for a particular machine or equipment when ALL of the following eight conditions are met:

1. The machine or equipment has no potential for stored or residual energy after shutdown which would endanger the employee.
2. The machine or equipment has a single energy source that can be identified and isolated.
3. The isolation and locking out of that energy source will completely de-energize and deactivate the machine or equipment.
4. The machine or equipment is isolated from that energy source and locked out during service or maintenance.
5. A single lockout device will achieve a locked out condition.
6. The lockout device is under the exclusive control of the authorized employee performing the service or maintenance.
7. The servicing or maintenance does not create hazards for other employees.
8. The employer using the exception has had no accidents involving the unexpected activation or energization of the machine or equipment during service or maintenance.

Outside Contractors

Outside contractors doing maintenance or repair work on any equipment at your facility, must share their lockout/tagout procedures with all effected employees. You must also share information on your lockout/tagout procedures with outside contractor.
# LIST OF AUTHORIZED LOCKOUT INDIVIDUALS

<table>
<thead>
<tr>
<th>Lock ID</th>
<th>Name of Employee</th>
<th>Job Title of Employee</th>
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</thead>
<tbody>
<tr>
<td>Number 1</td>
<td>Randy Kalmink</td>
<td>Master Electrician</td>
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<tr>
<td>Number 2</td>
<td>Bob Garrison</td>
<td>GM/PM Mechanical</td>
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<tr>
<td>Number 3</td>
<td>Michael Veltman</td>
<td>HVAC Mechanic</td>
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<tr>
<td>Number 4</td>
<td>Rick Middlecamp</td>
<td>Licensed Electrician</td>
</tr>
<tr>
<td>Number 5</td>
<td>Chris Schultz</td>
<td>GM/PM Mechanical</td>
</tr>
<tr>
<td>Number 6</td>
<td>Randy Vereeke</td>
<td>HVAC Mechanic &amp; Welder</td>
</tr>
<tr>
<td>Number 7</td>
<td>Marc Hulst</td>
<td>Master Electrician</td>
</tr>
<tr>
<td>Number 8</td>
<td>David DuBois</td>
<td>Licensed Plumber</td>
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<tr>
<td>Number 9</td>
<td>Michael Fairchild</td>
<td>Licensed Boiler Operator</td>
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<tr>
<td>Number 10</td>
<td>Michael VanDort</td>
<td>Painter</td>
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<td>Number 11</td>
<td>Michael Day</td>
<td>HVAC Mechanic</td>
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# APPENDIX B

## LIST OF AFFECTED EMPLOYEES BY JOB TITLES AND EQUIPMENT

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>ELECTRICIANS</td>
<td>Electrical panels, switches, wiring, lighting devices, fire systems, machines, controls, and motors</td>
</tr>
<tr>
<td>BOILER OPERATORS</td>
<td>Boilers, steamlines, condensate pumps, air compressors, chemical feed equipment, motors, and controls</td>
</tr>
<tr>
<td>PLUMBERS</td>
<td>Steam lines, pumps, compressors, water lines, controls, motors.</td>
</tr>
<tr>
<td>GENERAL MECHANICAL</td>
<td>Pumps, HVAC equipment, motors, air conditioners, and lighting equipment</td>
</tr>
<tr>
<td>HVAC</td>
<td>Chillers, steam lines, pumps, motors, controls, electrical panels.</td>
</tr>
<tr>
<td>PAINTING</td>
<td>Lights, electrical cords, switches, junction boxes.</td>
</tr>
</tbody>
</table>
### ENERGY SOURCE EVALUATION

**DATE**

**CONDUCTED BY:**

In order to determine all energy sources for each piece of equipment fill in the following table:

<table>
<thead>
<tr>
<th>Location</th>
<th>Equipment Name</th>
<th>Type of Equipment</th>
<th>Lockout Procedure</th>
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<table>
<thead>
<tr>
<th>Energy Source</th>
<th>Location of Isolating Device</th>
<th>Means of Isolation</th>
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Lockout Tagout Boxes and Supply Inventory

Each Authorized Employee should have their own Lockout Tagout box with the following supplies in them:

1. (3) – 1 ½ “ 12 gauge steel lockout hasps
2. (3) – laminated padlocks with key and employee number attached
3. (10) – vinyl lockout safety tags with ties
4. (3) – single pole and (2) – multi-pole electrical breaker lockouts
5. (1) – large electrical plug lockout

Additional Resources

- [www.michigan.gov/miosha](http://www.michigan.gov/miosha)  Part 85 The control of Hazardous Energy Sources