

Michigan Municipal Workers' Compensation Fund Safety and Health Resource Manual

Implementing Energy Control Procedures -- Lockout/Tagout

Machinery that starts up unexpectedly during maintenance or repairs can result in employee injury or death. Because of the grave risk, management must provide proper training on lockout/tagout procedures for employees who work on or with energized systems. Management also must develop and enforce a written lockout/tagout plan that documents

- appropriate procedures, and
- the disciplinary action that will result if employees fail to follow them.

The following laws require Michigan employers, including public agencies, to implement and monitor an effective lockout/tagout program:

Occupational Safety and Health Administration

OSHA 1910.147	Control of Hazardous Energy (Lockout/Tagout Energy Procedures)
MIOSHA Rule 408.14004	Working on or Near Exposed De-energized Parts
MIOSHA Rule 1910.147 and 333	Documentation, Hazardous Energy Control Procedures

What Employers Do

Employers should:

- Develop a written lockout/tagout program that includes both procedures for energy control and training for employees. The document should discuss the scope, purpose, authorization, rules, techniques, and enforcement of the program. Michigan Occupational Safety and Health Administration (MIOSHA) includes a sample written policy in its *Safety and Health Workbook*. You can also call the MMLRisk Management Services staff or the League's Loss Control Services for help.
- Maintain a current copy of the lockout/tagout program and make it available for inspection by employees and by the Director of the Michigan Department of Labor and his/her authorized representatives.
- Buy adequate locks and tags for each type of energy source at each location. Use effective tagout methods when lockout is not possible. Tagouts should provide at least as much protection for employees as lockouts.
- Provide training for employees. The training should cover the purpose of the program, methods of energy control and the proper use of lockout/tagout procedures. Employers should document all training. Videos are available by calling the League's Loss Control Services.
- Monitor the program for effectiveness.
- Designate employees "authorized" to perform lockout/tagout.
- Notify affected employees before and after lockout/tagout.

Lockout Procedures

Employers select "authorized" employees. Only these employees may perform lockout/tagout procedures.

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"Authorized" employees should:

- Establish a safe and orderly procedure before de-energizing circuits or equipment.
- Disconnect circuits and equipment requiring service from all electric energy sources. They should not use control circuit devices -- for example, push buttons, selector switches, or interlocks -- as the only means of de-energizing circuits or equipment. Interlocks are not acceptable substitutes for lockout.
- Release stored electric energy that might endanger employees. They should discharge capacitors and short circuit and ground high-capacitance elements if stored electric energy might endanger personnel. Employees should treat the capacitors and associated equipment as energized if they must handle them in meeting this requirement.
- Block or relieve stored non-electrical energy in devices that could re-energize electric circuit parts.
- Place a lock on each disconnecting means used to de-energize circuits and equipment on which employees will work. The "authorized" employee should attach the lock so that another employee cannot operate the disconnecting means without exerting undue force or using tools to remove the lock.

OSHA and MIOSHA standards do not consider circuits or equipment de-energized until employers meet the above requirements. Only then can employees work on the equipment.

"Authorized" employees should:

- Test equipment-operating controls or otherwise determine that the equipment will not restart.
- Use test equipment on the circuit elements and electrical parts of equipment to which employees will be exposed to verify that they are de-energized. The test should also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back-feed, even though specific parts of the circuit have been de-energized and are presumed to be safe. If the circuit that requires testing is more than 600 volts, nominal, the "authorized" employee should check that the test equipment is operating properly immediately before and immediately after the test.

Removing Lockouts/Tagouts

As with lockout/tagout, only "authorized" employees should remove energy controls. They should meet all of the following requirements *in the order listed* before re-energizing circuits or equipment, even temporarily:

"Authorized" employees should:

1. Conduct tests and visual inspections, as necessary, to check that employees have removed all tools, electrical jumpers, shorts, grounds, and similar devices so that the circuits and equipment can be safely energized.
2. Warn employees who are exposed to the hazards associated with re-energizing the circuit or equipment to stay clear of circuits and equipment.
3. Supervise the removal of energy controls.
4. The employee who applied each lock should remove it or direct an employee who is under his/her direct supervision to remove it.

If the employee who applied the lock is absent from the workplace, an "authorized" employee may remove it if he or she complies with both of the following provisions:

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- The employer verifies that the individual who applied the lock is unavailable.
 - The employer assures that the employee who applied the lock knows -- before resuming work -- that the "authorized" employee has removed it.
5. Determine by visual inspection that all employees are clear of the circuits and equipment.

Other Requirements

If using a lock is not practicable or if the employer can demonstrate that tagging procedures will provide safety equivalent to a lock, a tag may be used without a lock. The tag should comply with all the following requirements.

The tag should:

- Be of a distinctive employer design and clearly prohibit unauthorized energizing of circuits and removal of the tag.
- Not be used without an additional safety measure such as the removal of an isolating circuit element, the blocking of a controlling switch, or the opening of an extra disconnecting device.
- Meet the requirements of general industry safety standard Part 37. Accident Prevention Signs and Tag.

The employer should also train all persons who have access to controlling devices so they are familiar with the employer's tagging procedures.

Under the law, employers should comply with each of the above requirements. More important, compliance will help employers make certain that employees will be safe and thorough when they should use lockout/tagout procedures.

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Lockout/Tagout Procedures Self-Assessment

Many serious injuries -- even deaths -- occur each year as a result of employees working on or performing maintenance on equipment. Because of the grave risk to employees who work on or near machinery and other devices with stored energy, employers should take a proactive approach to Lockout/Tagout safety. In order to determine if your practices concerning the control of energy sources are adequate, you should review the following questions.

Does your organization:

1. **Have a written Lockout/Tagout policy?**

Yes No _____ →



The policy should:

- Identify the location of equipment with store energy.
- Identify energy control procedures;
- Identify training requirements for employees,
- Discuss the scope, rules, authorization, and enforcement of the policy; and
- Be accessible for inspection.

2. **Train your employees?**

Yes No _____ →



The training program should:

- Cover the purpose of the program;
- Cover the methods to control typical energy sources;
- Should be documented; and
- Should include a refresher course when conditions change.

3. **Enforce the use of the Lockout/Tagout policy?**

Yes No _____ →



Enforcement must include

- Monitoring the effectiveness of the program by conducting periodic checks of work areas.
- Designating employees who are authorized to perform lockout/Tagout.
- Disciplining employees who violate the policy.

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4. Have adequate locks and tags available?

Yes No



The locks and tags must:

- Fit the energy source.
- Not be centrally keyed or duplicated.
- Be controlled to ensure that extra keys are not available.

Note: *Tags should provide at least as much protection as locks.*

Conclusions



If you were able to honestly answer “yes” to all four of the above questions and your organization follows most or all of the suggested practices, then your organization has reduced its exposure to future claims. You should congratulate yourself.



If you were unable to answer “yes” to one or more of the four critical questions, your organization may have a greater exposure to claims. Missing components of one or more of the recommended practices may also indicate a deficiency in your current program. You should take one or more of the following actions:

- Correct any deficiency that may exist;
- Contact the Michigan Department of Labor, SET Division at 517/322-1809;
- Contact the Michigan Department of Labor, Bureau of Occupational Health Division at 517/335-8250;
- Contact MML Risk Management Services at 800/653-2483; or
- Contact the League’s Loss Control Services at 800/482-0626.

To obtain more detailed information regarding this topic, you should request a copy of the **PERC\$** document titled **Implementing Energy Control Procedures - Lockout/Tagout** from the League’s Loss Control Services.



Important Phone Numbers

MML Risk Management Services	734/662-3246 or 800/653-2483
Loss Control Services	800/482-0626
Michigan Department of Labor, SET Division	517/322-1809

Note:

This document is not intended to be legal advice. It does not identify all the issues surrounding the particular topic. Public agencies are encouraged to review their own procedures with an expert or an attorney who is knowledgeable about the topic.