



# GM Lockout and Energy Control

(Released, dated 7-26-18)

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**Course No.** GMLO8000, (LMS: 56755), version 1.0

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**Duration** 1 day

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**Objectives** Upon successful completion of this course, participants will be able to:

- Define Lockout Energy Control Requirements
  - Identify the Procedure for Locking out Equipment
  - Identify acceptable lockout devices
  - Identify different types of energy control devices
  - Identify the typical layout of lockout placards
  - Identify potentially hazardous energy sources
  - Understand required lockout control methods
  - Utilize verification procedures for controlling energy
  - Identify common electrical isolation devices.
  - Describe the procedures to lock out or control electrical energy.
  - Identify hydraulic components and their lockable disconnects.
  - Describe systematic procedures to lockout/control hydraulic energy.
  - Demonstrate the use of a captive key system.
  - Determine when SCS/MPS may be used for energy control
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# GM Lockout and Energy Control - Overview

This course is designed to familiarize participants with the requirements and procedures to perform Lockout Energy Control safely in a GM plant or facility. In addition, information on when an authorized person can use Safety Control Systems (SCS) or Monitored Power Systems (MPS) instead of Lockout Energy Control is explained thoroughly.

## GM Lockout Lecture & Exercises – 1 Day

Module	Content	Delivery Method	Time (Minutes)
1 – Lockout Overview	<ul style="list-style-type: none"> <li>Define Lockout Energy Control Requirements</li> <li>Identify Roles of Individuals Who Participate in the GM Lockout Energy Control Program</li> <li>Identify Requirements for Lockout Training and Inspections</li> <li>Identify the Procedure for Locking out Equipment</li> <li>Identify the Procedure for Restoring Equipment to Service</li> </ul>	Lecture	35
2 – Hazard Awareness	<ul style="list-style-type: none"> <li>Identify the work area</li> <li>Identify the energy-related hazards</li> <li>Determine exposure to energy related hazards</li> <li>Evaluate, and eliminate or control, exposure to energy-related hazards</li> <li>Understand the first ten steps of the lockout process, related to hazard awareness</li> </ul>	Lecture	25
3 – Devices and Identification	<ul style="list-style-type: none"> <li>Identify acceptable lockout devices, identification labels, and the GM Common Lock requirements</li> <li>Identify different types of energy control devices.</li> <li>Demonstrate the purpose and use of personal lockout locks.</li> </ul>	Lecture	25
4 – Lockout Energy Control Placards	<ul style="list-style-type: none"> <li>Identify the typical layout of lockout placards</li> <li>Identify potentially hazardous energy sources</li> <li>Understand required lockout control methods</li> <li>Utilize verification procedures for controlling energy</li> </ul>	Lecture, Exercises	55



<p><b>5 – Energy Control Procedure (ECP) and Inadequate Lockout</b></p>	<ul style="list-style-type: none"> <li>• Understand the Hierarchy of Health and Safety Controls</li> <li>• Understand the use of an Energy Control Procedure (ECP)/ Inadequate Lockout Form</li> <li>• Identify the responsibilities for completing the Energy Control Procedure (ECP)/Inadequate Lockout Form and establishing a Safe Operating Practice.</li> </ul>	<p>Lecture</p>	<p>25</p>
<p><b>6 - Electrical Energy</b></p>	<ul style="list-style-type: none"> <li>• Identify common electrical isolation devices.</li> <li>• Describe the procedures to lock out or control electrical energy.</li> <li>• Follow a step-by-step process for locking out an electrical energy system.</li> </ul>	<p>Lecture</p>	<p>30</p>
<p><b>7 – Hydraulic Energy</b></p>	<ul style="list-style-type: none"> <li>• Identify common hydraulic components and their lockable disconnects.</li> <li>• Describe the step-by-step procedures to lock out or control hydraulic energy.</li> <li>• Follow a step-by-step process for locking out a hydraulic energy system.</li> </ul>	<p>Lecture</p>	<p>30</p>
<p><b>8 – Pneumatic Energy</b></p>	<ul style="list-style-type: none"> <li>• Identify common pneumatic disconnects</li> <li>• Describe the procedures to lock out or control pneumatic energy</li> </ul>	<p>Lecture</p>	<p>25</p>
<p><b>9 – Gravity, Momentum, and Stored Energy</b></p>	<ul style="list-style-type: none"> <li>• Identify machinery with gravity, momentum, and stored mechanical energy.</li> <li>• Understand the methods needed to control these hazards.</li> <li>• Define less recognized forms of energy that also may present hazards</li> </ul>	<p>Lecture</p>	<p>20</p>
<p><b>10 – Special Energy Systems</b></p>	<ul style="list-style-type: none"> <li>• Identify special energy systems on equipment that may pose hazards</li> <li>• Describe the procedures to lock out or control hazardous energy on special energy systems</li> </ul>	<p>Lecture</p>	<p>25</p>
<p><b>11 - Multiple Energy Systems and Safeguarded Manufacturing Cells</b></p>	<ul style="list-style-type: none"> <li>• Demonstrate the lockout procedure for equipment and machinery with multiple energy sources.</li> <li>• Identify a cell, zone, and safeguarded manufacturing cell.</li> <li>• Demonstrate the use of a captive key system.</li> </ul>	<p>Lecture, Exercise</p>	<p>25</p>



12 - Safety Control Systems (SCS) Monitored Power Systems (MPS)	<ul style="list-style-type: none"><li>• Identify the differences between SCS, MPS, and Lockout</li><li>• Determine when SCS/MPS may be used for energy control</li><li>• Understand an SCS/MPS Task Placard &amp; Safety Procedures</li><li>• Demonstrate the use of MPS entrance Gate Boxes, and other SCS devices, to safely control energy to devices that cause motion when servicing or maintaining equipment</li></ul>	Lecture, Exercise	100
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## Summary of Exercises

Listed below is a summary of the student exercises and activities for the course. Unique equipment and software for completing a particular exercise is shown in the right column that is in addition to the baseline training equipment required for conducting the entire course.

<b>Module</b>	<b>Lab / Section Name (sections noted in bold)</b>	<b>Unique Equipment &amp; Software required</b>
Module 4: Lockout Energy Control Placards	Identify Cell Isolation Devices	GM Training Cell.
Module 11: Multiple Energy Systems and Safeguarded Manufacturing Cells	All students lockout the cell.	GM Training Cell.
Module 12: Safety Control Systems (SCS) Monitored Power Systems (MPS)	MPS Lockout Exercise	GM Training Cell GM Trainers (G12/G16)