



Lockout, Energy Control, MPS and SCS for GM Contractors

(Released, dated 7-26-18)

Course No.	GMLO8001
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Duration	1 day
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Objectives	Upon successful completion of this course, participants will be able to:
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- 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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Lockout, Energy Control, MPS and SCS for GM Contractors - 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">• Define Lockout Energy Control Requirements• Identify Roles of Individuals Who Participate in the GM Lockout Energy Control Program• Identify Requirements for Lockout Training and Inspections• Identify the Procedure for Locking out Equipment• Identify the Procedure for Restoring Equipment to Service	Lecture	35
2 – Hazard Awareness	<ul style="list-style-type: none">• Identify the work area• Identify the energy-related hazards• Determine exposure to energy related hazards• Evaluate, and eliminate or control, exposure to energy-related hazards• Understand the first ten steps of the lockout process, related to hazard awareness	Lecture	25
3 – Devices and Identification	<ul style="list-style-type: none">• Identify acceptable lockout devices, identification labels, and the GM Common Lock requirements• Identify different types of energy control devices.• Demonstrate the purpose and use of personal lockout locks.	Lecture	25
4 – Lockout Energy Control Placards	<ul style="list-style-type: none">• Identify the typical layout of lockout placards• Identify potentially hazardous energy sources• Understand required lockout control methods• Utilize verification procedures for controlling energy	Lecture, Exercises	55



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



12 - Safety Control Systems (SCS) Monitored Power Systems (MPS)	<ul style="list-style-type: none">• Identify the differences between SCS, MPS, and Lockout• Determine when SCS/MPS may be used for energy control• Understand an SCS/MPS Task Placard & Safety Procedures• 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	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.

Module	Lab / Section Name (sections noted in bold)	Unique Equipment & Software required
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)