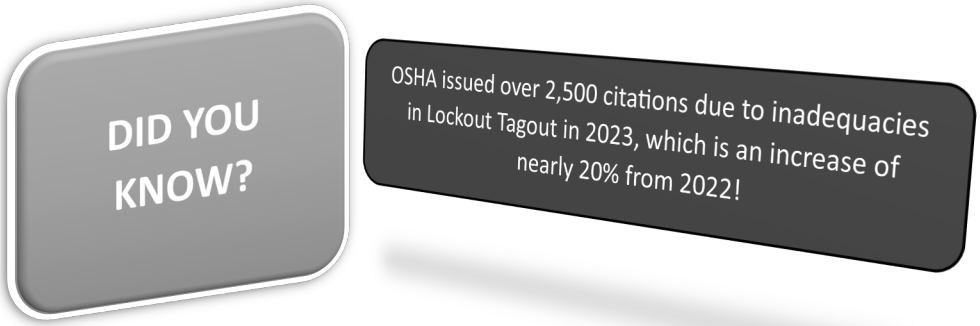
LSLA Safety Campaign 2024

Raising Awareness to Hazards in the Lumber Industry

March Focus – *Requirements of Lockout Tagout*

Lockout Tagout is one of the most emphasized and recognized safety programs used today, or do we say "unused" safety programs today? Lockout Tagout was once again on OSHA's Top 10 Most Cited Standards in 2023. Having appropriate protocols in place to ensure employees are protected from hazardous energy sends countless employees home safely to their families every day. OSHA estimates proper Lockout Tagout Programs prevent 50,000 injuries and 120 deaths each year! Obviously, we know that having the appropriate program and procedures in place prevents these injuries and catastrophes, but we also know the results of not having them.



What is Hazardous Energy?

When employees are performing routine maintenance or servicing on machines and equipment, they are exposed to hazardous energy due to the unexpected release of energy. This includes employees that aren't conducting the routine maintenance or servicing but are in the area and may be unaware of what is taking place and the hazards that exist. Injuries resulting from the failure to control hazardous energy during these activities can be serious and sometimes, even fatal. Injuries may include electrocution, burns, crushing, cutting, lacerating, amputating, or fracturing body parts, and others.

Hazardous energy may appear in a variety of forms in the workplace. The types of hazardous energy employees could potentially be exposed to are electrical, mechanical, hydraulic, pneumatic, chemical, and thermal. Gravity is a form of hazardous energy that is often forgotten. Equipment and objects that have an opportunity of falling on employees must be considered when exposure is present.

Electrical	Mechanical
Energy existent in live lines, batteries, and capacitors. Electricity can harm people through electric shock, electrocutions, burns or explosions.	Energy contained in an item under tension and in moving parts. The release of mechanical energy may result in an individual being crushed, struck by an object, or exposed to pinch points causing amputations.
Hydraulic	**Pneumatic**
Energy stored within a pressurized liquid. When hydraulic energy is released in an uncontrolled manner, individuals may be crushed or struck by moving machinery, equipment or other items.	Energy stored within pressurized air. When pneumatic energy is released in an uncontrolled manner, individuals may be crushed or struck by machinery, air, or other items.
Chemical	**Thermal**
Energy released when a substance undergoes a chemical reaction. Energy is normally released as heat, but can be released in other forms such as pressure and often fire or explosions.	Energy from an explosion, flame, objects with high or low temperatures or radiation from heat sources. Common injuries include burns, scales, dehydration, frostbite, ext.

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What Responsibilities come with Lockout Tagout?

The impact of an effective Lockout Tagout Program relies on the collaboration between employers and employees. Each has their own specific responsibilities, with each working in unison to develop and maintain a safe practices in the workplace, and by abiding by the expectations and controls put in place to mitigate exposures to hazardous energy.

Ultimately it is the primary responsibility of the employer to protect employees from hazardous energy. Employers must establish the program, which lays out all practices and protocols in their entirety, develop procedures to safeguard employees from the release of hazardous energy and ensure they are being always followed, and responsible for training employees so that they know and understand workplace hazards, and are able to follow specific procedural requirements. This goes for all employees, not just those who work on equipment, but all employees near equipment with sources of hazardous energy.

Employees are responsible for abiding by all policies and procedures at all times. Most importantly, those employees who are certified (authorized) to work on equipment with hazardous energy, must follow the step-by-step guidance laid out in each specific procedure to ensure the process goes smoothly and safely. If a process is identified for being inadequate, they need to notify their employer so that the procedure can be addressed immediately with adequate revisions.

What are the Requirements of a Lockout Tagout Program?

Employers must develop and implement an Energy Control (Lockout Tagout) Program to represent the foundation of all Lockout Tagout activities. The intent of the Energy Control Program is to ensure that before any employee touches a piece of equipment where there is potential for unexpected release of energy, the equipment is isolated from the energy source, rendering it inoperative, and thereby protecting employees from injury.

The Energy Control Program has three core components:

- Employee Training
- Machine-Specific Procedures
- Periodic Inspections

The program itself must be reviewed annually and/or must be revised when any changes to the equipment are made.

Employee Training

All employees must go through specific training regarding their roles with their involvement in the program. Training should be done annually and/or when procedures change to increase awareness to those who each procedure could impact. Employees need to understand the aspects of the Energy Control (Lockout Tagout) Program, elements of mahince-specific-procedures and how they impact and intermingle with their job tasks, and OSHA compliance to Lockout Tagout, with the responsibilities of employers to implement practices and controls to meet the minimum requirements.

Authorized employees must be knowledgeable and possess the skills necessary for safe application of machine-specific procedures. They need to be able to recognize hazardous energy sources and means of isolation and controlling each hazardous energy source. It's vital that these employees are aware of the dangers associated with deviating from the procedure, by means of severe injury, and disregarding procedures in terms of company disciplinary action policies.

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Affected Employees	Authorized Employees	Other Employees
Employees whose jobs require them to operate or use machines or equipment that need servicing or maintenance but cannot perform such specific procedures.	Employees who Lockout Tagout on machines or equipment in order to perform servicing or maintenance on that machine or equipment.	Work in an area in which machine or equipment servicing or maintenance is being performed.

Machine-Specific Procedures (Lockout Tagout Procedures)

Employers must ensure that each piece of equipment that presents exposure to hazardous energy has its own specific procedure to de-energize the equipment and control the hazard. The procedures should detail the specific steps necessary for shutting down, isolating energy sources, and securing equipment to control hazardous energy, as well as steps for the placement, removal and transfer of Lockout Tagout devices.

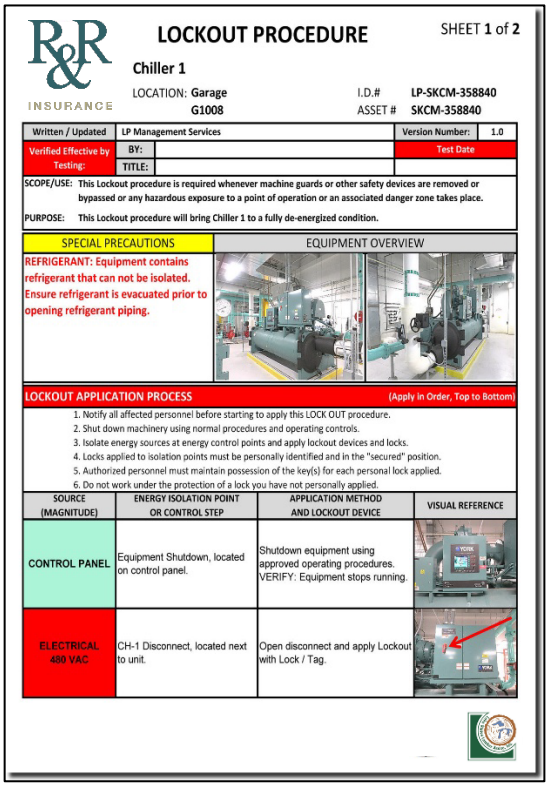
These procedures must be available to employees to understand the requirements of that specific equipment hazards and control measures. A great work practice is to laminate machine-specific procedures and place them on the equipment that they represent. This takes away all guessing on how to properly lockout the equipment. There are also QR code options that can be created and placed on the equipment as well.

Lockout	Tagout
The placement of a lockout device on an energy isolating device, in accordance with a standard procedure, ensuring the energy isolation device and the equipment being controlled cannot be operated until the **Lockout** device is removed.	The placement of a Tagout device on an energy isolating device, in accordance with an established procedure, to indicate that the isolating device and the equipment being controlled may not be operated until the **Tagout** device is removed.
	

Procedural Steps to Ensure Safe Operations

- **Prepare for Shutdown** –Notify affected employees of activities, identify shutdown procedures, identify energy sources, identify energy isolation devices, identify quantity and type of Lockout Tagout device.
- **Shutdown** – Normal shutdown procedures to deactivate the equipment.
- **Locate & Isolate** – Apply energy-isolating devices and de-energize equipment.
- **Lockout all Switches & Controls** – Apply Locks and Tags.
- **Control Residual Energy** – Release, restrain, or dissipate energy.
- **Verify Energy Control Methods** – Verify mechanisms cannot be turned on and check for energy source.
- **Perform Servicing** – Conduct operations need to maintain and/or repair equipment.

- **Prepare for Startup** – Verify the controls are in neutral and verify all employees are away from equipment.
- **Remove Devices** – Remove Locks and Tags.
- **Start-up** – Replace any removed guarding, inspection area for materials and employees, re-energize equipment, and ensure everything is functioning properly and safely.
- **Notify** - Notify affected employee activities have been completed and equipment is ready for use.



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LOCKOUT PROCEDURE SHEET 1 of 2

Chiller 1

LOCATION: **Garage** I.D.# **LP-SKCM-358840**
G1008 ASSET # **SKCM-358840**

Written / Updated	LP Management Services	Version Number:	1.0
Verified Effective by Testing:	BY:	Test Date	
	TITLE:		

SCOPE/USE: This Lockout procedure is required whenever machine guards or other safety devices are removed or bypassed or any hazardous exposure to a point of operation or an associated danger zone takes place.

PURPOSE: This Lockout procedure will bring Chiller 1 to a fully de-energized condition.

SPECIAL PRECAUTIONS

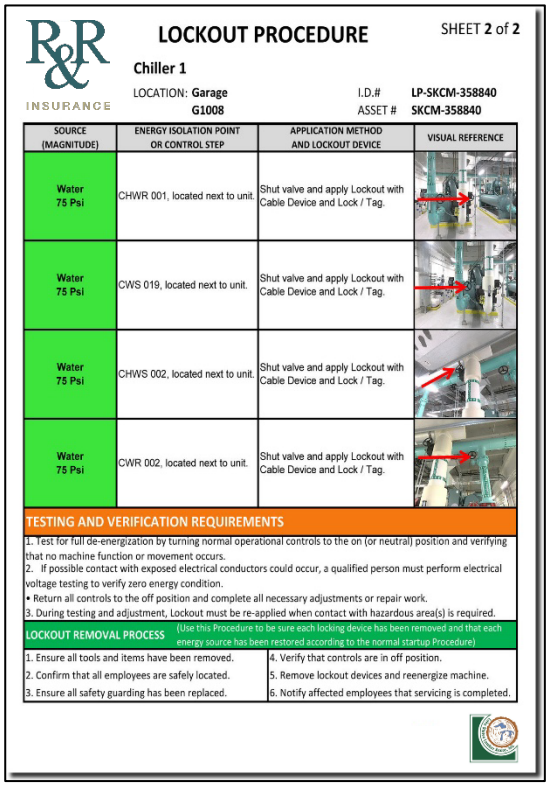
REFRIGERANT: Equipment contains refrigerant that can not be isolated. Ensure refrigerant is evacuated prior to opening refrigerant piping.

EQUIPMENT OVERVIEW

LOCKOUT APPLICATION PROCESS (Apply in Order, Top to Bottom)

1. Notify all affected personnel before starting to apply this LOCK OUT procedure.
2. Shut down machinery using normal procedures and operating controls.
3. Isolate energy sources at energy control points and apply lockout devices and locks.
4. Locks applied to isolation points must be personally identified and in the "secured" position.
5. Authorized personnel must maintain possession of the key(s) for each personal lock applied.
6. Do not work under the protection of a lock you have not personally applied.

SOURCE (MAGNITUDE)	ENERGY ISOLATION POINT OR CONTROL STEP	APPLICATION METHOD AND LOCKOUT DEVICE	VISUAL REFERENCE
CONTROL PANEL	Equipment Shutdown, located on control panel.	Shutdown equipment using approved operating procedures. VERIFY: Equipment stops running.	
ELECTRICAL 480 VAC	CH-1 Disconnect, located next to unit.	Open disconnect and apply Lockout with Lock / Tag.	



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LOCKOUT PROCEDURE SHEET 2 of 2

Chiller 1

LOCATION: **Garage** I.D.# **LP-SKCM-358840**
G1008 ASSET # **SKCM-358840**

SOURCE (MAGNITUDE)	ENERGY ISOLATION POINT OR CONTROL STEP	APPLICATION METHOD AND LOCKOUT DEVICE	VISUAL REFERENCE
Water 75 Psi	CHWR 001, located next to unit.	Shut valve and apply Lockout with Cable Device and Lock / Tag.	
Water 75 Psi	CWS 019, located next to unit.	Shut valve and apply Lockout with Cable Device and Lock / Tag.	
Water 75 Psi	CHWS 002, located next to unit.	Shut valve and apply Lockout with Cable Device and Lock / Tag.	
Water 75 Psi	CWR 002, located next to unit.	Shut valve and apply Lockout with Cable Device and Lock / Tag.	

TESTING AND VERIFICATION REQUIREMENTS

1. Test for full de-energization by turning normal operational controls to the on (or neutral) position and verifying that no machine function or movement occurs.
2. If possible contact with exposed electrical conductors could occur, a qualified person must perform electrical voltage testing to verify zero energy condition.
   • Return all controls to the off position and complete all necessary adjustments or repair work.
3. During testing and adjustment, Lockout must be re-applied when contact with hazardous area(s) is required.

LOCKOUT REMOVAL PROCESS (Use this Procedure to be sure each locking device has been removed and that each energy source has been restored according to the normal startup Procedure)

1. Ensure all tools and items have been removed.
2. Confirm that all employees are safely located.
3. Ensure all safety guarding has been replaced.
4. Verify that controls are in off position.
5. Remove lockout devices and reenergize machine.
6. Notify affected employees that servicing is completed.

Periodic Inspections

Not only does the Energy Control Program need an annual review, machine-specific procedures need to have an annual review, otherwise known as periodic inspection. The intent of periodic inspections is to ensure that the correct protocol for each procedure remains accurate and at its highest safety value.

These inspections need to be done at least annually; however, the procedures should be revised anytime there is a change with the equipment or process. These inspections are required to be done annually to ensure competency to procedure applications.

Inspections must:

- Be done only by authorized employees, by conducting the machine-specific procedure, to ensure it's free of any deviations or inadequacies.
- Include a formal review by the authorized employee

- Be in observation of a supervisor or another authorized employee to observe the process, and confirmation of the competency of the authorized employee conducting the procedure so that it is done to that of what's defined on the procedure.
- Documented and signed by both participating personnel.

This process must be documented for annual recordkeeping requirements and to provide confirmation should an inspection take place.

Additional Resources

For any additional information or assistance on lockout tagout, or any other workplace hazards and control measures, reach out to R&R Insurance or an LSLA Representative.