DEQ Toolbox Talk: Lockout Tagout

Each year, more than 50,000 employees are injured and about 120 are killed when machines that are being serviced or maintained unexpectedly start up. Establishing procedures and training employees to follow OSHA's "Control of Hazardous Energy" Standard, more commonly known as the Lockout Tagout (LOTO), helps to prevent these incidents.

Seven steps must be followed every time an employee locks out machinery or equipment for service or maintenance:

1. **Preparation for Shutdown**

   The authorized employee performing LOTO operations must notify all employees in the area that a lockout/tagout (LOTO) is about to occur.

   Review energy sources, hazards and LOTO procedures

2. **Machine or Equipment Shutdown**

   Follow the facility's established procedures for an orderly shutdown to avoid hazards that may be caused by an unplanned shutdown. If the shutdown will affect employees beyond the immediate area let them know.

3. **Machine or Equipment Isolation**

   Identify and disconnect or isolate all energy sources, including electrical, hydraulic, steam, compressed air or gas, thermal and residual energy.

4. **Lockout or Tagout Device Application**

   Attach the LOTO device(s) in a way that will prevent them from being switched on or to an unsafe position.

5. **Draining Stored Energy**

   Release, restrain, disconnect, or drain residual or stored energy so the machine or equipment is safe. (Examples: capacitors, springs, elevated components, rotating flywheels, hydraulic lift systems, air, gas, steam or water pressure.)

6. Verification of Isolation

Try to start the machine with the LOTO device(s) in place and then return the machine to the “off” or “safe” position.

7. Release from Lockout or Tagout

Before LOTO devices are removed, inspect the work area for non-essential items and ensure that:

- All machine or equipment components are intact.
- Employees are safely positioned or removed from the area before the machinery or equipment is restarted.
- Employees are notified that LOTO devices have been removed and that the machinery will be restarted

NC DEQ Lockout Tagout Toolbox Talk

Each year, more than 50,000 employees are injured and about 120 are killed when machines being serviced or maintained unexpectedly start up. The procedures and training to prevent these types of injuries must follow OSHA's "Control of Hazardous Energy" Standard, also known as Lockout Tagout (LOTO).

1) A LOTO program covers the ***servicing*** and/or ***maintenance*** of machines or equipment where the unexpected start-up or release of stored energy could cause injury.

2) Forms of energy that may injure or kill an employee include:

    a. Mechanical
    b. Hydraulic
    c. Chemical
    d. Pneumatic
    e. Electrical
    f. Thermal

3) Three types of employees are involved in LOTO:

    a. An **Authorized employee** locks out or tags out the equipment and performs service or maintenance on that equipment.
    b. An **Affected employee** is someone whose job will be affected by the equipment being locked out or tagged out.
    c. **Other employees** are those in the area where the LOTO will take place, but it doesn't affect their work.

4) If the equipment cannot be locked out of service, then it must be tagged out of service.

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5) Materials used for LOTO must be:

    a) Provided by the employer.
    b) Identifiable to an individual worker.
    c) Not used for other purposes (i.e. padlocks)

6) Materials used for LOTO must be:

a) Durable
b) Standardized
c) Substantial
d) Identifiable

There are seven steps to follow for LOTO:

1. Preparation for Shutdown: The authorized employee performing LOTO operations must notify all employees in the area that a lockout/tagout (LOTO) is about to occur.

    - Review energy sources, hazards and LOTO procedures

2. Machine or Equipment Shutdown: Follow the facility's established procedures for an orderly shutdown to avoid hazards that may be caused by an unplanned shutdown. If the shutdown will affect employees beyond the immediate area let them know.

3. Machine or Equipment Isolation: Identify and disconnect (or isolate) all energy sources, including electrical, hydraulic, steam, compressed air or gas, thermal and residual energy.

4. Lockout or Tagout Device Application: Attach the LOTO device(s) in a way that will prevent them from being switched on or to an unsafe position.

5. Drain Stored Energy: Release, restrain, disconnect, or drain residual or stored energy so the machine or equipment is safe. (Examples: capacitors, springs, elevated components, rotating flywheels, hydraulic lift systems, air, gas, steam, or water pressure.)

6. Verification of Isolation: Try to start the machine with the LOTO device(s) in place and then return the machine to the “off” or “safe” position.

7. Release from Lockout or Tagout**:** Before LOTO devices are removed, inspect the work area for non-essential items and ensure that:

   a) All machine or equipment components are intact.

   b) Employees are safely positioned or removed from the area before the machinery or equipment is restarted.

   c) Employees are notified that LOTO devices have been removed and that the machinery will be restarted.

(For more information please see SA-10 on page 316 of the NC DMF Safety Manual)

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NC DEQ Lockout/Tagout Quiz

Name:_____ Date:_____

1) Name 3 types of energy that can cause injuries:
    1. _____
    2. _____
    3. _____

2) The person who lockouts out/tags out a device and will service that device is called the _____ employee.

3) True or False: A padlock used for lockout/tagout can also be used for other purposes when needed._____

4) Name 3 items that can store energy and must have the energy released before work is performed:
    1. _____
    2. _____
    3. _____

5) What are the Seven Steps of Lockout/Tagout?
    1. _____
    2. _____
    3. _____
    4. _____
    5. _____
    6. _____
    7. _____

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NC DEQ Lockout/Tagout Quiz Key

1) Mechanical, hydraulic, chemical, pneumatic, electrical, thermal

2) Authorized

3) False

4) capacitors, springs, elevated components, rotating flywheels, hydraulic lift systems, air, gas, steam, or water pressure.

5)

1. Prepare for shutdown.
2. Machine or equipment shutdown.
3. Machine or equipment isolation.
4. Lockout or tagout device application.
5. Release stored energy.
6. Verification of isolation.
7. Release from lockout or tagout.

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