Lockout-Tagout Training for University @ Albany Employees...

Control of Hazardous Energy
OSHA standard 1910.147

University @ Albany SUNY
Office of Environmental Health & Safety 518/442-3495  October 2010
Primary Purpose of LOTO:

from OSHA standard:
“...to prevent injury to servicing and/or maintenance employees due to the unexpected startup of machines and equipment, or release of stored energy...”

• Proper LOTO blocks or stops flow of energy from power source
“Servicing and/or Maintenance”
definition source: OSHA LOTO standard 1910.147 (b)

- “Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where employees may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.”
Energy Sources:

- Electrical
- Mechanical
- Pneumatic
- Fluid and gases
- Thermal
- Water under pressure
- Gravity
- Stored energy such as springs, capacitors
Problems of Hazardous Energy:

- Accidental start-ups
- Electric shock
- Disabling injuries (amputations, disfigurement)
- Death
- OSHA estimates that ~ 500 workers die each year from LOTO-related accidents
The “Fatal Five” top causes of LOTO injuries: (source NIOSH)

- Failure to stop equipment
- Failure to disconnect from power source
- Failure to dissipate (bleed, neutralize) residual energy
- Failure to clear work areas before restarting
- Accidental restarting of equipment
Typical Plant or Shop Equipment that would require LOTO...

- Fan & Pump Motors
- Air Tanks, Compressors, Valves
- Belt-Driven Fans, etc.
- High-Temp Hot Water
- Elevators
- Table Saws, Band Saws, Routers
- Printing Presses
- Valves, Pumps
- Hydraulics in VOC, Motor Pool, etc.
Types of Lockout Devices

- Locks
- Blocks
- Chains
- Multi-lock hasps
- Wheel valve covers
- Ball valve covers
- Blinds, Blanks
Requirements for LOTO Devices

They must be:

- Durable
- Standardized
- Substantial
- Identifiable:
  - “Do Not Operate”
  - “Do Not Start”
  - “Do Not Energize” etc.
When must Lockout Tagout procedures be used?

Answer: When servicing or maintaining equipment where:

- Hazardous energy exists
- Unexpected start-up could occur
- Employees are required to place any part of their body in harm’s way
- Employees are required to remove or bypass a safety guard or device
LOTO Exceptions

source: OSHA LOTO standard 1910.147 (a) (2) (ii)

- Work on cord and plug controlled devices (i.e. repair person has control of the plug at all times)
- “Hot tap” operations where shutdown is not feasible
- Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations
Normal production operations (defn):

“The utilization of a machine or equipment to perform its intended production function.”

This exception usually applies to production facilities with conveyor belts or assembly lines.
Two categories of employees covered by LOTO

**Authorized Employee**
- Maintains equipment
- Services Equipment
- Is trained to use LOTO

**Affected Employee**
- Those who operate, work around or occasionally adjust equipment
Authorized Employee Responsibilities…

- Repair and service equipment as needed
- Ensure that all energy sources are locked out
- Test equipment to verify residual energy is dissipated
- Place a “Danger—Do Not Operate” tag on equipment
- Obtain assistance when necessary
- Remove locks and/or tags following LOTO
- Coordinate multi-shift repair
- Communicate with affected employees
Affected Employee Responsibilities…

- Notify Facilities when equipment needs repair or adjustment
- Leave all LOTO devices in place
- Verify equipment operating properly following LOTO procedures
- Follow all safety rules while operating the equipment
STRETCH BREAK OR MOVIE TIME
Now let’s look at the University at Albany LOTO written policy for sequence of LOTO procedures…
University @ Albany Policy on Control of Hazardous Energy

- To be posted on “albany.edu/ehs” webpage
- Updated and reviewed periodically by the Office of EH&S (feedback and constructive critiques are welcome)
- This policy is mandatory for all authorized and affected employees
EH&S Office Role in LOTO:

- Review program effectiveness annually and revise written LOTO policy as needed
- Provide appropriate levels of employee awareness training (Note: supervisors must also train their employees on “equipment-specific” procedures---in some cases this will require written maintenance procedures).
- Provide purple “U-Albany” locks; hasps; keys, etc.
- Provide advice and guidance to shops and departments regarding equipment & compliance issues
Some final thoughts….

- Follow campus safety procedures for LOTO
- Refer to procedures on how to lockout specific equipment
- Keep everyone informed when equipment is repaired or serviced
- Stay alert and avoid shortcuts
- NEVER remove anyone else’s Lock. Their life is on the line!
FINAL SAFETY MESSAGE...

De-energize,
De-energize,
De-energize
&
Lockout/Tagout

Thank you for participating. Stay safe and be well.