ENERGY ISOLATION lockout/tagout procedures

Energy Isolation Lockout/Tagout Procedures

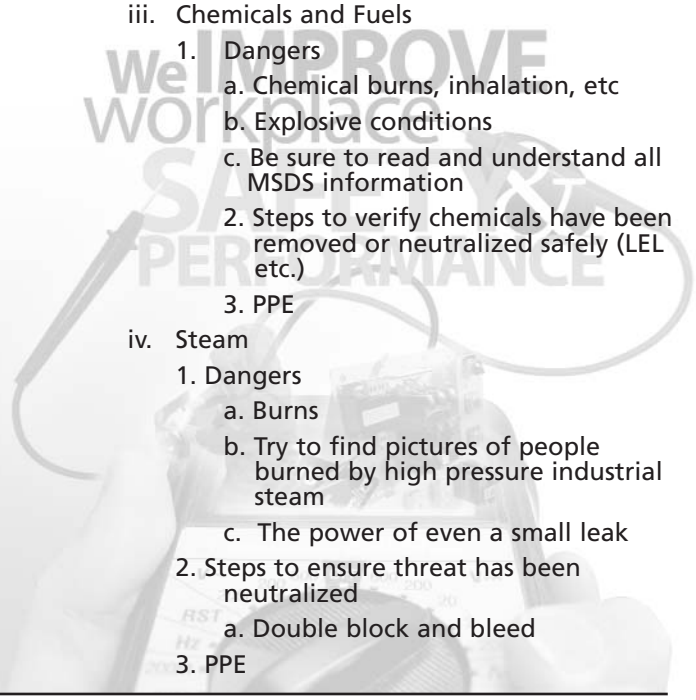
1-DAY TRAINING

1. SAFETY IN THE WORKPLACE AND CORPORATE POLICY

- a. Why it is important
  - i. Statistics, examples of how it can make a company more competitive
- b. How to make your workplace safer
  - i. (presentation to be directed towards managers) Enforcement of existing rules with real penalties
  - ii. Lead by example
  - iii. Ensure employees have the tools necessary to do their jobs safely
    - 1. Ideas that will be helpful on both large and small scales
    - 2. Include some good low/no budget changes that can still help
  - iv. Ensure employees know what the corporate policy is
    - 1. how they are individually responsible
    - 2. what repercussions might be faced
- c. Who has responsibility for what equipment
  - i. Facilities equipment
  - ii. Production equipment
  - iii. Leased or externally owned equipment
- d. Appropriate/common enforcement measures
  - i. How to monitor employee safety without waiting for an accident - most accidents are preventable
  - ii. If employees violate safety policy what should the punishments be
    - 1. Include specific examples of violations and their punishments

2. ENERGY SOURCES - LOCKABLE

- i. Electricity
  - 1. Dangers of electricity (such as how little it can take to be lethal)
  - 2. Steps to verify that it has been locked out correctly
    - a. Voltmeter
    - b. Attempting a restart
  - 3. PPE and training required to service if it cannot be locked out (i.e. touching bare live wires)
- ii. Pneumatic
  - 1. Dangers
    - a. Actuators can move equipment very quickly
    - b. Heating a pressurized vessel will cause pressure to rise, possible explode
    - c. Can blow debris into skin/eyes
  - 2. Steps to verify that it has been locked out correctly
  - 3. PPE
- iii. Chemicals and Fuels
  - 1. Dangers
    - a. Chemical burns, inhalation, etc
    - b. Explosive conditions
    - c. Be sure to read and understand all MSDS information
  - 2. Steps to verify chemicals have been removed or neutralized safely (LEL etc.)
  - 3. PPE
- iv. Steam
  - 1. Dangers
    - a. Burns
    - b. Try to find pictures of people burned by high pressure industrial steam
    - c. The power of even a small leak
  - 2. Steps to ensure threat has been neutralized
    - a. Double block and bleed
  - 3. PPE



Prerequisite:	None
Standard Class Size:	Up to 14
Program Length:	6 hours
CEU s:	0.6

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3. ENERGY SOURCES - NON-LOCKABLE

i. Kinetic
   1. Show how much force it would take to stop a common industrial fan or flywheel at low speeds
   2. How to verify motion has stopped
      a. Visual can have an issue if under fluorescent lighting if movement is flickering at 60Hz too

ii. Gravity
   1. Show how much force a typical 4"x4" block can take and compare to the weight and capacity of a typical press
   2. How to identify when machine parts need to be secured
   3. How to properly secure

iii. Springs
   1. How to identify where spring energy can exist
      a. Bails of wire or fence
      b. Springs in overhead doors
      c. Machine doors or other components
   2. How to safely secure or relieve stress from a spring

iv. Thermal
   1. How hot is too hot
   2. How you can help dissipate
   3. Proper PPE for instances where job prohibits dissipation
      a. Ducts for molten zinc for die casting is one that I am aware of
      b. Possibly plastics extrusion too

v. Hydraulic
   1. Compressed fluid can store energy much the same as pneumatic can
   2. Get accumulator presentation from JJH

4. LOTO SCENARIOS

a. When to lockout (specific cases of each)
   i. Maintenance
   ii. Jamming
   iii. Breakdown

b. How to lockout
   i. Group lockout
   ii. Shift changeovers
   iii. How to use devices
      1. Hands on applications of devices
      2. Possibly try to partner with a supplier to provide a full range of devices (Master Lock?)

5. LOTO PROCEDURES

a. What machines require a specific LOTO procedure

b. What is required in a lockout procedure
   i. Cite OSHA standards
   ii. Annual audits

c. Compare minimum requirements with our product

d. How to create procedures
   i. In house vs. ESC or similar
   ii. Time and cost savings