Effective Control of Hazardous Energy (LOTO)

What you need to know to ensure compliance with OSHA's LOTO standard

STC

EHS SOLUTIONS FOR BUSINESS RESULTS

Why are we discussing this?

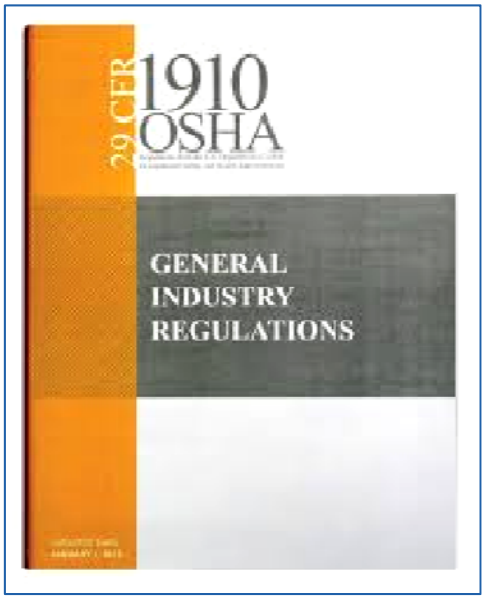
- Injuries and fatalities
- OSHA Top 10
- Audits commonly find LOTO deficiencies

What we will cover today

- Background on LOTO
- Common LOTO audit findings
- Steps to ensure compliance
- Resources

Background

Published Sept 1989



LOTO – What does it cover?

- Program for preventing possible injuries from:
  - Unexpected startup of machine or equipment
  - Release of stored energy

LOTO – When is it required?

- Removing or bypassing a guard or other safety device
- Working in the point off operation or danger zone

LOTO – What is hazardous energy?

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EHS Solutions for Business Results

LOTO – What other standards apply?

- Machine guarding standard (Subpart O)
- Electrical safety standard (Subpart S)

What is Servicing and Maintenance?

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EHS Solutions for Business Results

Common Findings

Lack of Machine Specific Procedures

LOCKOUT TAGOUT PROCEDURE
CFR 1910.147

Developed by	Reviewed by	Revised by
ESC	ESC	

Equipment #: LY-401	Description: Liquid Ring Pump (LRP)
Location: Room 1067: Lyophilization Equipment Room	Revn: 0 Date: N/A Origin Date: 10/20/2006

3	LOCKS & TAGS NEEDED	**NOTE** Verify LYO is not being used before shut down. Verify System is depressurized before servicing. Pump suction and discharge are not lockable. Disconnect and cap if necessary before servicing.

Affected Area(s): (label to be added by department head)

South Side View

North Side View

West Side View

ALWAYS PERFORM A MACHINE STOP BEFORE LOCKING OUT DISCONNECTS

ID	Source	Device	Location	Method	Check
E-1	Electrical 480V	Padlock	Isolation point on North side of pump.	Move E-1 labeled 'Liquid Ring Pump' to off. Lock out.	Verify machine is deenergized.
W-1	Water Inlet	Padlock	Isolation point on West side of pump.	Turn W-1 valve to closed position. Lock out.	Verify pressure has bled off.
P-1	Pneumatic 120 PSI	Ball valve device	Isolation point on South side of pump.	Turn P-1 valve (MV-44) to closed position. Lock out.	Verify pressure has bled off.

DANGER **OPENING A GUARD DOES NOT CONSTITUTE A LOCKOUT** DANGER

Any machine modifications must be shown in procedure. Contact safety dept. to update procedure.

Safety Is Your Responsibility!

Machine Specific Procedures Not Required If:

- Single source of hazardous energy
- Under exclusive control
- No other employees exposed

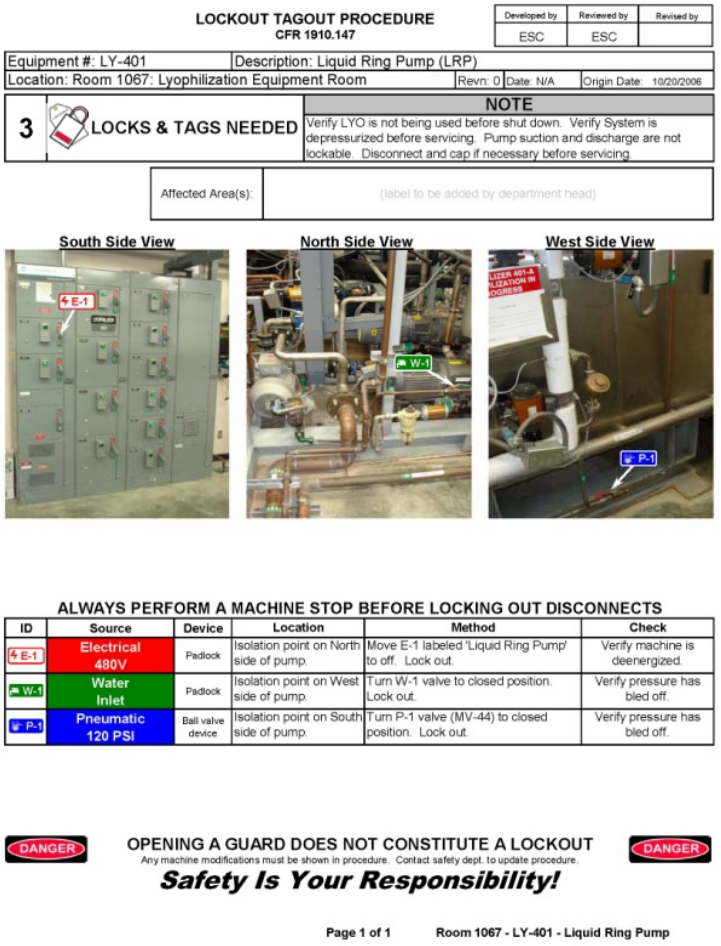
Single Procedure For Same Equipment

- OK for “like” machines and equipment
- Disconnect points are clearly identified

Common Findings

Incomplete/Inaccurate Machine Specific Procedures

- Not all energy sources identified
- Energy control points not identified
- No step-by-step procedures
- No verification



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Page 1 of 1 Room 1067 - LY-401 - Liquid Ring Pump

Common Findings

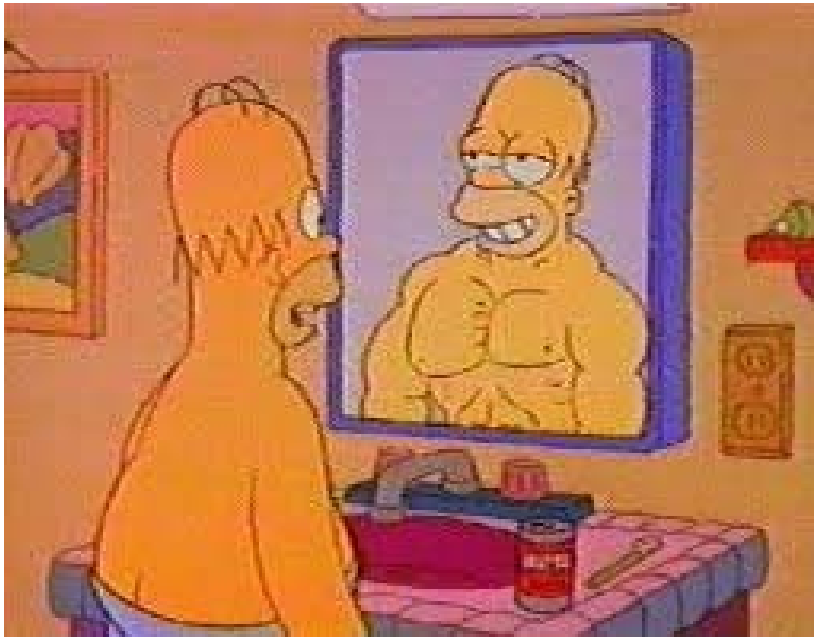
Periodic Inspections of Machine Specific Procedures

- Annual requirement
- Each “like” machine or equipment
- Authorized employee’s responsibilities under the procedure

Common Findings

Periodic Inspections of Machine Specific Procedures

- Cannot inspect yourself
- Inspector must also be an authorized employee



Common Findings

Periodic Inspections of Machine Specific Procedures

Inspection certified and include:

- Specific equipment procedure evaluated
- Date of inspection
- Employees included in inspection
- Person performing the inspection

Periodic Inspections

Do's & Don'ts

- Tracking system
- Group procedures
- Generic procedure
- Exempt equipment

Questions?

Please type them in the question box at right

Common Findings

Miss-Application of Minor Servicing Exception

- Observations:
  - Tooling changes
  - Guards bypassed
  - No effective protection

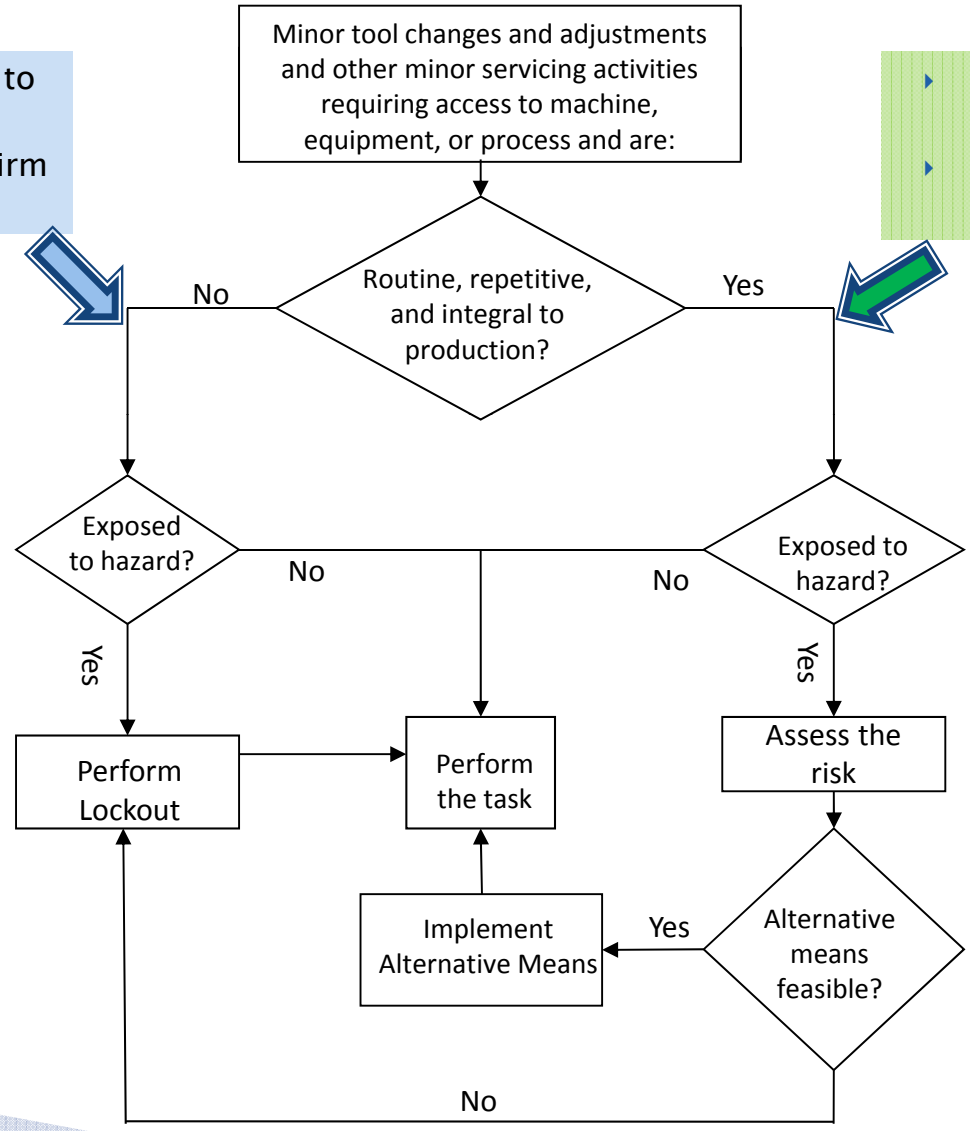
Common Findings

Application of Minor Servicing Exception

- Takes place:
  - Normal production operations
- Must be:
  - Routine
  - Repetitive
  - Integral
  - Provide effective protection

Energy Control Flow Chart

- Inspections related to troubleshooting
- Inspections to confirm machine repair



- Inspections related to quality
- Inspections related to the product

Common Findings

Relying Upon:

Selector Switches

Push Buttons

Interlocks

To control hazardous energy

What is Effective Protection?

Energy Isolating Devises

What May Not be Effective Protection

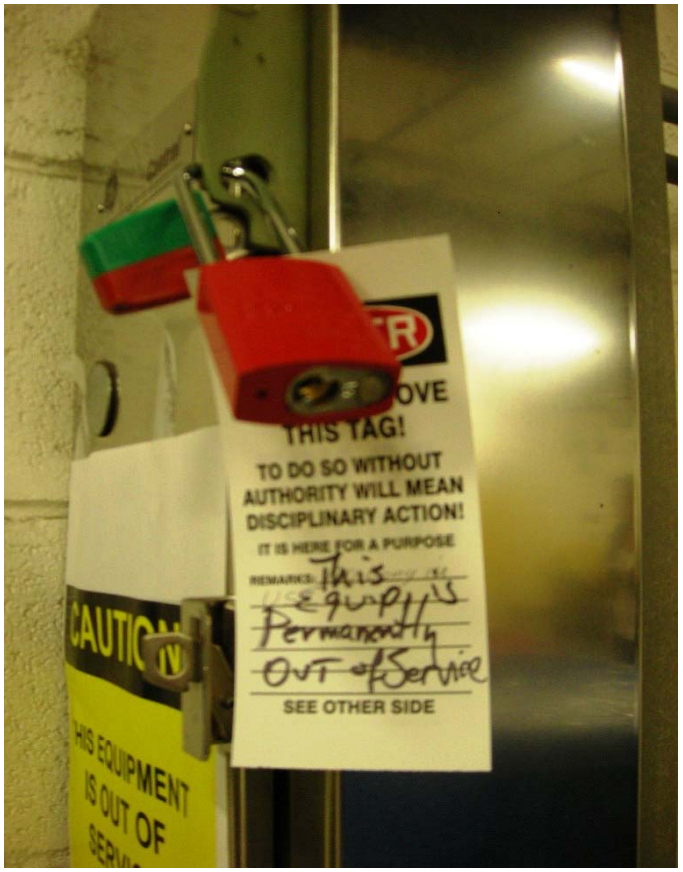
OSHA's Point of View (CPL 02-00-147)

- Guards that protect during normal operation
- PLCs

Common Findings

Use of LOTO Locks & Tags for Other Purposes

- Uses identified:
  - Out-of-service
  - Securing valves and dampers
  - Securing equipment
- Dilutes program effectiveness



Recommended Actions

- Standardized LOTO locks & tags
- “Facility” locks and Out-of-Service tags
- Train personnel
- Verify

So what have we discussed?

- Compliance is still an issue
- Common audit findings
- Preventing common audit findings

Resources

- OSHA Directive: The Control of Hazardous Energy – Enforcement Policy and Inspection Procedures (CPL 02-00-147)
  - http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=3809
- OSHA's Lockout/Tagout e-tool
  - http://www.osha.gov/dts/osta/lototraining/index.html
- Cal/OSHA's "Lockout/Tagout for Employers" e-tool
  - http://www.dir.ca.gov/dosh/etools/08-003/index.htm

Resources

- NFPA 70E – 2012 *Standard for Electrical Safety in the Workplace*
  - Article 120.2(D) Hazardous Electrical Energy Control Procedure
- ANSI Z244.1 – 2003 (R2008) *Control of Hazardous Energy Lockout/Tagout and Alternative Methods*
- ANSI B11.19 2010 *Performance Criteria for Safeguarding*
- LinkedIn – Lockout Tagout Best Practices – Discussion Group

Questions?

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