ATTACK OF THE LOCK-NESS TAGOUT MONSTER!

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Taming of the S.H.R.E.W.
• Learn how to create lock out tag out (LOTO) procedures
• See useful examples from others
• Determine whether equipment lockouts can be defeated
• Place value on other safe work practices
• Explore how to define adequate training and the value of that training
• Learn how to investigate to find corrective actions
Energy Isolating Device:

• Mechanical device that physically prevents the transmission or release of energy, including but not limited to:
  • a manually operated electrical circuit breaker;
  • a disconnect switch;
  • Manually operated switch that **disconnects all circuit conductors** from all ungrounded supply conductors;
  • a line valve;
  • a block;
  • and other devices used to block or isolate energy

• NOTE: push-button selector switches and other control-type devices **are not energy-isolating devices**. (Emergency stops)
E-stop is not Energy Isolating Device

- Does not isolate other hazards
- Is not a disconnect
Emergency Stop is not Disconnect
Compliance vs. Assessment

- Compliance
- Assessment
- Assess hazards to eliminate them
- Document the assessment
Basic requirements of effective program

1. Company Policy and Program
2. Written equipment procedures
3. Training
4. Annual auditing
5. LOTO equipment and devices

• “Written specific” is required and is a common OSHA citation
• Training is required and is a common OSHA citation
• Discuss the LOTO equip and devices you use
A corporate policy

- Written Policy is clear and easy to understand (not lawyer talk).
- Like your LOTO procedures, policy is dynamic and changes with you.
- Give to Authorized employees and require they understand it.
- Discuss entire program so they know how to lock out your equipment.
- Tell when to lock out your equipment.
- Include name(s) of person allowed to lock out.
Machine specific procedures

- This is most difficult to comply with and most cited of CFR 1910.147.
- Mistake: simple equipment like exhaust fans, bench grinders and drill presses require machine specific procedures.
- Each machine must meet 8 criteria to be exempt from a pre-written machine specific procedure. CFR 1910.147(c)(4)(i)
- Can lead to $120,000 fine per piece of equipment without procedure.

**WORSE:** SOMEONE COULD DIE
Training

- Training is **required** for all authorized and affected employees.
- This training is kept **current with changes** in your program.
- I recommend **annual** training for all authorized employees.
- **Must discuss** info from your annual audit.
- Use a **quiz** to confirm and document comprehension.

How long must training be?
Annual auditing

- Audit each authorized **employee**
- Audit each LOTO **procedure**
- Must audit every year to make sure the **equipment hasn’t changed**
- Confirm the procedure is **still accurate**.
- **Test** at least annually to confirm Authorized employees understand how to and when to, properly apply LOTO.
The necessary tools to lock out WILL REQUIRE MORE than just locks.

LOTO Hasps and lock boxes are necessary if MORE THAN ONE PERSON works on the equipment.

Everyone has to be authorized and trained to YOUR PROCEDURE

All authorized employees MUST BE PROTECTED BY THEIR LOCK when working on equipment.

Dozens of specialized devices designed to work on specific valves, breakers and connectors.
• Evaluate and purchase devices **easiest to use, best for** your needs.
• Use the breaker Lock out device **designed to fit** your specific breaker.
• Pulling the fuse is **not enough** for LOTO.
• Must install device that **prevents** accidental release or re-energization.
• **Re-usable** tags clearly define your LOTO, are easy and inexpensive.
Excuses for failure to LOTO

• There are **NO HAZARDS** here that require lock out

• **An easier way** to do my work, so I create my own procedure that eliminates guards, locks, etc., **BUT** allows the energy to stay on

• **Too much time** to get the equipment, follow procedures, apply equipment,

• **Too much time** to restore power, put everything back away, and go back to work
Eliminating the Excuses

The “CLOSE AT HAND” rule:
The equipment to LOTO is right at the equipment for fast easy use.

SCARY!!
The value of other safe work practices

• ELECTRICAL SAFETY PROCEDURE
  • Only COMMERCIAL OR INDUSTRIAL electricians do my work
  • NO ONE WORKS ON ANY equipment that is energized
  • No one uses a VOLTAGE METER
  • No one opens an ELECTRICAL PANEL
The Brewpub’s dishwashing machine... and the dishwasher

• THIS IS A TYPICAL routine maintenance or repair type task
Can equipment lockouts be defeated?
Example injury?

- What went wrong
- What steps should occur here.
- Defined as a non-routine task
“Mash tun and the mop” Near miss

- An event occurs
- By luck, you aren’t hurt
Lock out required?
I can’t!
Build a procedure
Build a procedure
Build a procedure
Taming of the S.H.R.E.W.
Heat source?

Mash rake?

CIP

Fill

Recirculation

Sparge Arm

Transfer
Points to Lock Out

- What are the hazards of each
- Why is it a hazard

- Inlet hot water
- Heat source for tun
- Inlet grain
- Mash rake
- Outlet hot wort
- Recirculation
- CIP
LOTO point symbols
Step by step procedure

- Inlet hot water: more than one?
- Heat source for tun
- Inlet grain
- Mash rake
- Outlet hot wort
- Re-circulation
- Clean in Place: more than one?
1) Shut off and lock tun heat source
2) Close and lock the inlet hot water
3) Shut off and lock mash rake
4) Shut off and lock grain feed system
5) Close and lock re-circulation loop
6) Shut off and lock CIP
7) Close and lock the outlet out of tun
8) Is sparge separate from inlet water?
A lock on each loto point? 5 and 7
What standard must LOTO device meet?
Don’t buy LOTO kits
Lock is only for LOTO
By shape, color or size
Must locks be assigned?
Train your employees to your procedure

- What have to do to LOTO machine
- What your LOTO equipment looks like
- How to document your LOTO
- Where your LOTO documents are stored
- Train non-Authorized too
Check this!

Photograph the LOTO point
Put photo on paper
Add the procedure to paper
Laminate the paper
Paste it to the LOTO point
Wrap up

• We just identified many **different** variations of equipment
• Exposed many different variations of Lock out
• Each brewery needs to do specific training **on your own** stuff.
• **Never rely** on what people learned somewhere else
Thank you for your help:

- Jim Stricker,
- Nicole Reiman, Odd 13
- Dry Dock Brewing team
- Left Hand Brewing team
- Joe Schiraldi, Sleeping Giant
- Facebook: @brewery.safety.consulting
- And: I can do this because Mary lets me