

A to Z: Lockout/Tagout Programs

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Speaker

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Topics

- Reasons for a LOTO program
- Setting up a LOTO program from scratch
- Maintaining a LOTO program

2016 Incident Summary

- Hospital in NJ
- Worker was on ladder changing a 277 Vac light ballast live
- No LOTO was used
- Worker was shocked and fell 6ft from ladder and struck his head
- Worker died 3 weeks later from his injuries

2016 Incident

- Willful:
 - Workers were not trained on safe electrical work practices
- Serious:
 - Live electrical parts were not deenergized prior to work
 - LOTO was not used
 - No written procedure for deenergizing 277 Vac light ballast
 - Site had no requirement for workers to be qualified as electrical workers
 - Site had no requirement to use VR gloves while doing live work

Why do we need a LOTO program?

- Protect employees
- Compliance
 - OSHA
 - ANSI/ASSE Z244.1
 - NFPA 70E

When is LOTO appropriate?

- If harm can result from:
 - Unexpected energization
 - Unexpected start-up
 - Release of stored energy
 - Actions of persons

Activities that may need LOTO?

For machines, equipment or processes, if you are:

- Installing
- Constructing
- Repairing
- Adjusting
- Inspecting
- Unjamming
- Setting up
- Testing
- Troubleshooting
- Cleaning
- Dismantling
- Servicing
- Maintaining

What may NOT need LOTO?

- Some Cord/Plugged equipment
 - Single energy source
 - Unplugging kills power
 - Plug is under exclusive control
- Some Hot Tap work
 - Fluid/Gas pipelines
- Some Vehicles
 - Passenger/Recreational vehicles
 - Personal boats
 - Private aircraft

What makes up a LOTO program?

- Workplace evaluation
- Written policy/program
- Training
- Materials
- Reviews

Workplace Evaluations

- Energy alone ≠ LOTO
- Risk assessment is needed
 - Task specific
 - Exposure to hazard is the key
 - Be careful to not change work scope

Components of a Written Policy

- Identify
 - Tasks, responsibilities, sources, devices
- Operational
 - Equipment procedures, shift changes, contractors
- Implementation
 - Training, communication, supplying equipment
- Maintenance
 - Monitoring, auditing, management of change
 - Recordkeeping

Communication

- Affected employees:
 - Awareness level
- Authorized Employees: Fully trained on the program, including:
 - Changes
 - Incidents
 - Data
 - Audits

Training

- Initial training
 - New hires
 - New program
- Refresher
 - Periodic
- Retraining
 - When need arises

Sample Training Topics

- Review written program
- Regulations
- Best practices
- Types and magnitudes of energy
- Physical equipment
- Equipment procedures
- Experienced personnel “Lessons Learned”

Determine if training was effective

- Check for:
 - Know what is in the program
 - Understand the energy sources
 - Recognize the energy sources
 - Know how to protect against the sources

Determine if training was effective

- Perform an assessment
 - Verbal exam
 - Written exam
 - “Qualification” type assessment
- Authorized employee list

Equipment Specific Procedures

- “1910.147(c)(4)(i) Procedures shall be developed, documented and utilized for the control of potentially hazardous energy...”

Equipment Specific Procedures

- Scope
- Purpose
- Authorization
- Rules
- Techniques

Equipment Specific Procedures

- Also, means to enforce compliance:
 - Statement of intended use of procedure
 - Steps to shutdown and secure equipment
 - Placement, removal, transfer of LOTO devices
 - Testing requirements

Equipment Specific Procedures - Exception

1. No stored/residual energy
2. Single source-readily identified and isolated
3. Single source will completely deenergize
4. Single LOTO device is needed
5. Equipment is locked out during work
6. Exclusive control of worker
7. Work poses no hazards to other workers
8. No past mistakes

Basic LOTO Procedure

1. Preparation / Coordinate shutdown
2. Shutdown
3. Isolate
4. Apply LOTO

5. Test equipment “Dead”
6. Dissipate stored energy
7. Prevent re-accumulation of energy

Program Review

- Periodic Assessment should include review of:
 - Written Program
 - Equipment specific procedures
 - Devices / Hardware
 - Alternative methods
 - Communication
 - Training
 - Documentation

Hardware

- Locks
 - Uniquely identifiable, only used for LOTO
- Tags
 - Withstand environment, 50 lbs, “Do Not Operate” statement
- Locks and Tags
 - Standardized, durable, not easily removed
- Specific devices

Common Problems

- No ownership / passion
- Lack of enforcement
- Lack of inspections
- Program Manager doesn't fully understand requirements
- Authorized Employees are "scared" enough
- "Old Dog" Syndrome

Common Problems

- Budget / lack of financial support
- No backshift support
- Language barrier
- Training without Qualification
- Inadequate training / qualification
- Overly ambitious programs
- Lack of feedback from workers

Questions?

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