
WELCOME

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EHS COMMITMENT FROM THE TOP



Michel Combes

CEO Alcatel-Lucent

2013 Sustainability Report

*My ambition is for Alcatel-Lucent to be **the** recognized leader in sustainability and responsible business innovation for the technology industry.*

..... Right First Time
SAFE EVERY TIME

ZERO TOLERANCE SAFETY PRINCIPLES



We always use the appropriate Personal Protective Equipment and Fall Arrest systems when working at heights.



We never work under the influence of alcohol or drugs.



We never work on energized equipment or in the vicinity of high voltage power transmission lines unless qualified.



We always have a lift plan when performing a critical lift.



We never exceed speed limits or travel at speeds which are dangerous for the type of road, vehicle, or conditions.



We always wear seat belts when traveling in, or operating vehicles.



We never use a hand held phone or text while driving.

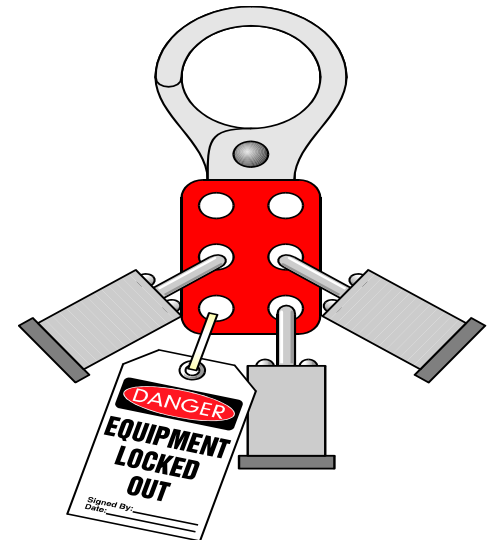


Energy Control Procedures- Lockout Tagout

LES038WG- June 2014

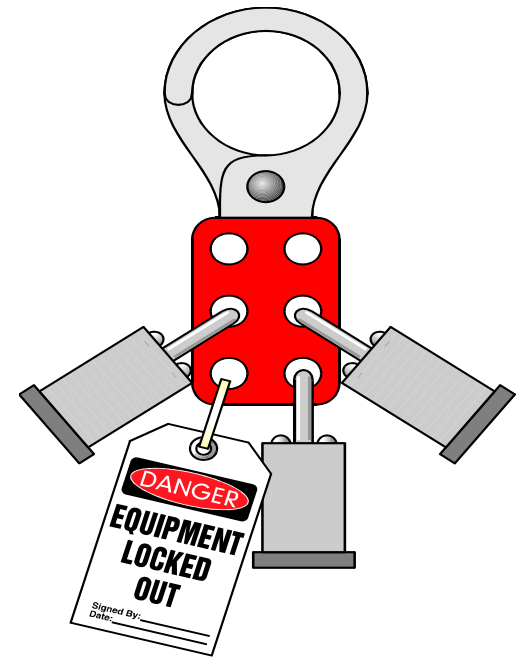
Program Goals

- Recognition of potential hazardous energy forms.
- Recognition of energy isolating devices.
- Understanding of the appropriate procedures when performing Lockout Tagout (LOTO).



Session Agenda

- Introduction and Definitions
- Operations not requiring LOTO
- Equipment Specific Procedures
- Working on Customer Premises
- Tagout Only Procedures
- Special Situations
- Periodic Inspections
- Responsibilities and Training



Introduction

- History
- Overview of Lockout/Tagout
- Responsibilities



Definitions

Affected Employee



- A person who operates or is required to work around equipment on which servicing or maintenance is being performed under Lockout and/or Tagout.

Definitions

Authorized Employee



- A person who locks out and/or tags out a machine or equipment in order to perform service or maintenance.

Definitions

Energy

- Energy is not limited to electrical power. It also includes energies such as hydraulic, pneumatic, chemical, gravity, thermal, spring, and radiant.

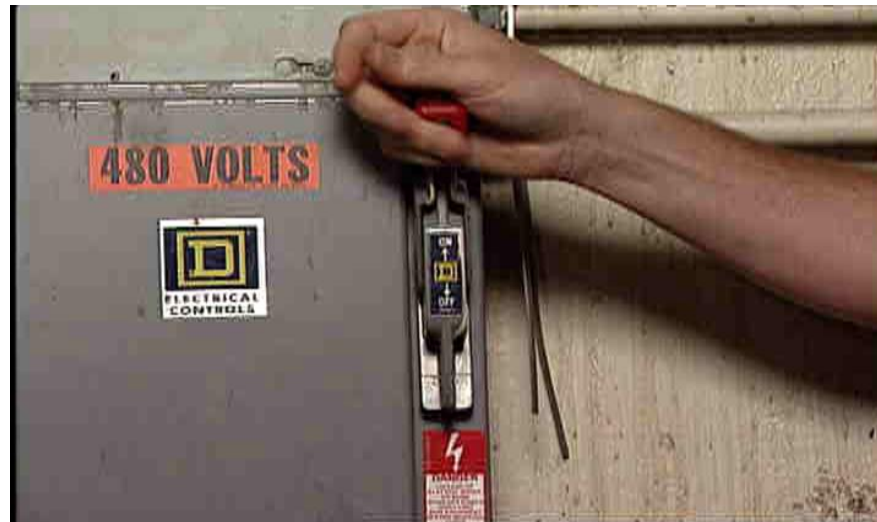
Energy Control Program

- A Lockout/Tagout program consisting of defined procedures, training, periodic inspections and documentation.

Definitions

Energy Isolating Device

- An electrical disconnect or valve used to disconnect that power source from the equipment being serviced.



Definitions

Lockout Device



- A device, a lock, that holds an energy isolating device in the “safe” or “off” position. It prevents the energizing of the machine or equipment.
- The lockout device may either be a lock alone, or a lock utilized with a device capable of accepting a lock.

Definitions

Lockout

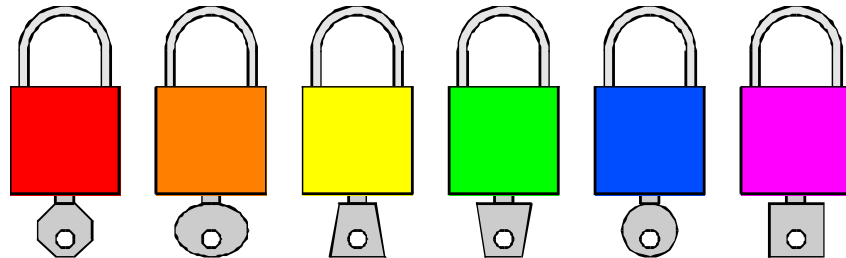
- The placement of a lockout device on an energy isolating device in accordance with an established procedure. It ensures the equipment being serviced cannot be operated until the lockout device is removed.



Definitions

One Lock One Key Rule

- Locks, tags and keys must be individually assigned. Only one key should be in existence.



KEYED DIFFERENTLY

Definitions

Tagout

- Placing a tag on a lockout device to indicate the energy isolating device may not be operated until the lockout device and tagout have been removed.



Definitions

Tagout Device

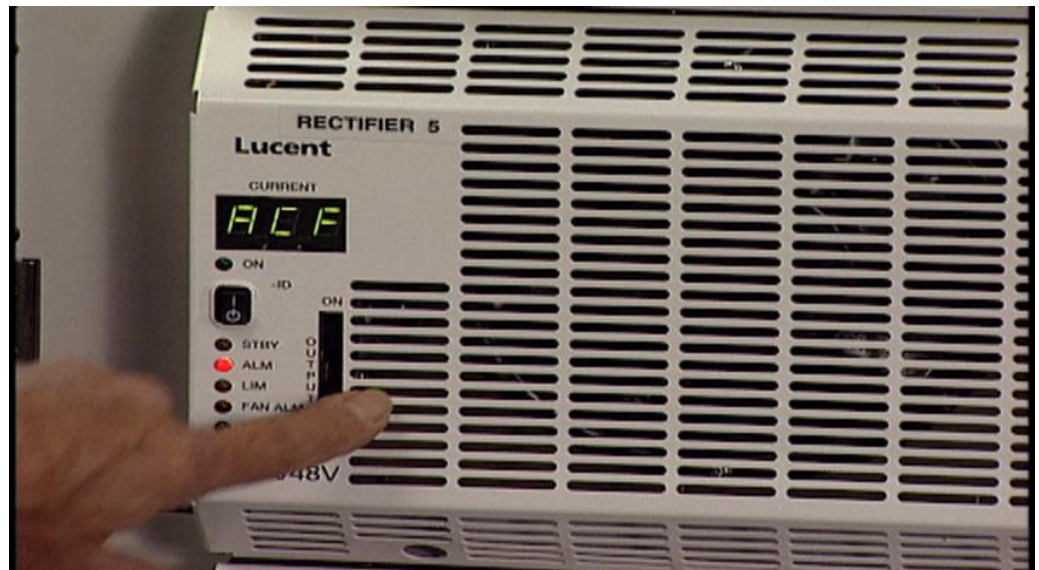
- Warning device in the form of a tag, which is fastened to a lockout device. The lockout device is then attached to an energy isolating device. It must be sturdy to prevent inadvertent removal. They shall be a standard color, shape, and sized and used only as a tagout device.



Definitions

Zero Energy State

- The condition equipment is in when energies of any type are non-existent.



Can you identify the authorized employee?



Answer



Which of these demonstrates the use of a lockout device?



Answer



When is Lockout/Tagout NOT required?

Cord and Plug Operations

- One energy source
- Single plug under exclusive control of operator

Equipment Specific LOTO Procedures (ESLP)

- Mandatory for equipment requiring Lockout/Tagout.
- Completed by authorized employee or in-charge in conjunction with client each time.
- A LOTO System Specific Form is required every time LOTO is performed during equipment maintenance or service, except:
 - When a form already exists
 - When a specific Lockout/Tagout Procedure has already been written

LOCKOUT/TAGOUT SYSTEM SPECIFIC FORM	
Form completed by: _____	Date: _____
Title: _____	
I. Equipment Identification	
Equipment Name: _____	
Manufacturer's Name: _____	
Model Name or Number: _____	
Location of Equipment: _____	
<input type="checkbox"/> If checked here, this form has a list of equipment attached to it which is the "same or similar" in configuration, operation, and energy sources present. Therefore, this document will apply to each item designated on the list.	
II. Identification of Hazardous Energy Sources Present	
<input type="checkbox"/> Electrical	<input type="checkbox"/> Pneumatic (pressurized air)
<input type="checkbox"/> Hydraulic	<input type="checkbox"/> Chemical
<input type="checkbox"/> Pressurized Gas (other than air)	<input type="checkbox"/> Thermal (heat, other than steam)
<input type="checkbox"/> Steam	<input type="checkbox"/> Water (high pressure)
<input type="checkbox"/> Mechanical (gravity activated, spring activated, flywheel activated, etc.)	
<input type="checkbox"/> Other (specify): _____	

Energy source #1:	Amount of associated energy:
Hazards associated with energy source:	
Description and location of energy Control Point:	Lockout/ Tagout requirements:
	<input type="checkbox"/> Lockout/ Tagout required
	<input type="checkbox"/> Tagout only (if lockout is not possible)
AFTER LOCKOUT, does stored or residual energy remain or can it re-accumulate?	<input type="checkbox"/> NO <input type="checkbox"/> YES
Energy source #2 (if present):	Amount of associated energy:
Hazards associated with energy source:	
Description and location of energy Control Point:	Lockout/ Tagout requirements:
	<input type="checkbox"/> Lockout/ Tagout required
	<input type="checkbox"/> Tagout only (if lockout is not possible)
AFTER LOCKOUT, does stored or residual energy remain or can it re-accumulate?	<input type="checkbox"/> NO <input type="checkbox"/> YES

Specific Safety Precautions

- Safety requirements for the LO/TO activities are outlined in the Lockout Tagout program document.
- Key points to remember
 - Do not turn on an Energy Isolating Device until it is determined why it is in the off position.
 - Ensure employees are cleared from the area before activating.
 - Follow precautions to prevent arcing when activating an energy isolating device.

Working on Customer Premises

Follow procedures outlined in in the LOTO Program.

1. Request customer to shut-down equipment.
2. Customer applies lock and tag.
3. Alcatel-Lucent authorized employee applies lock and tag.

Inability to de-energize equipment

When equipment cannot be de-energized.

- Document specific precautions / procedures.
 - Obtain approval from supervisor and customer.
- Minimum personnel requirements:
 - 2 qualified people required when exposed to energized circuit parts > 50 volts
 - First Aid/CPR trained
 - Proper electrical training, tools, PPE

What is wrong here?



Choices

1. Low Voltage gloves are not being worn.
2. Lockout/Tagout is not being implemented.
3. Electrical tape should be used.
4. A tag should be used with the tape.

Choices

1. Low Voltage gloves are not being worn.
- 2. Lockout/Tagout is not being implemented.**
3. Electrical tape should be used.
4. A tag should be used with the tape.

Lockout/Tagout - Initial Concerns

- Refer to the Equipment Specific Lockout Procedure (ESLP) for the equipment being serviced.
- Only authorized employees shall perform LOTO procedures.
- Notify affected employees prior to application of lockout device.

Six Step LOTO Procedure

1. Prepare for Process Shutdown
2. Perform Shutdown
3. Isolate
4. Perform Lockout/Tagout
5. Release All Stored Energy
6. Verify Zero Energy State

Step 1: Preparation for Shutdown

Authorized employee to determine:

- The type(s) / magnitude of energy types.
- The energy hazards.
- Means to control the energy.
- Procedures to follow.

Step 2: Perform Equipment Shutdown

Utilize established procedures:

- Technical manual
- Engineering organization
- Equipment manufacturer
- Supervision
- Equipment operator

Be aware of equipment modifications.

Step 3: Machine or Equipment Isolation

Energy isolating devices that control **primary energies** are to be turned off or closed to isolate the equipment.

- Electrical
- Pneumatic
- Hydraulic

Lockout Device Application

- Utilize assigned lock.
- Apply lockout device to energy isolating device (EID).
- Do not attach another employee's lock.
- Hold the EID in the “off” position.
- Utilize multiple lock hasps.

Hardware examples

- Multiple lock hasps
- Energy locking device
- Cord and plug shrouds
- Durable tags
- Circuit breaker lockout devices

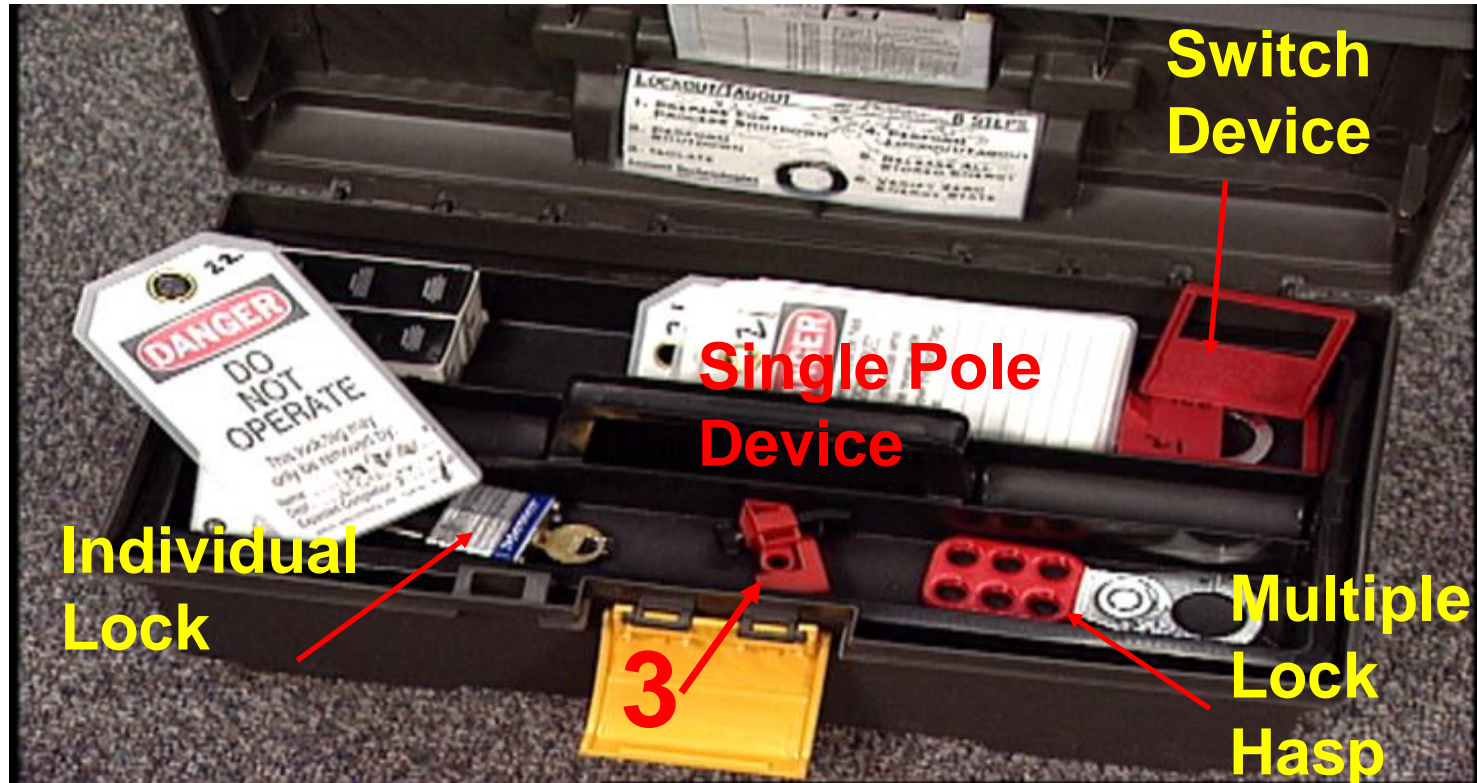


LOTO Toolkit (R-5989) Contents - (North America example)

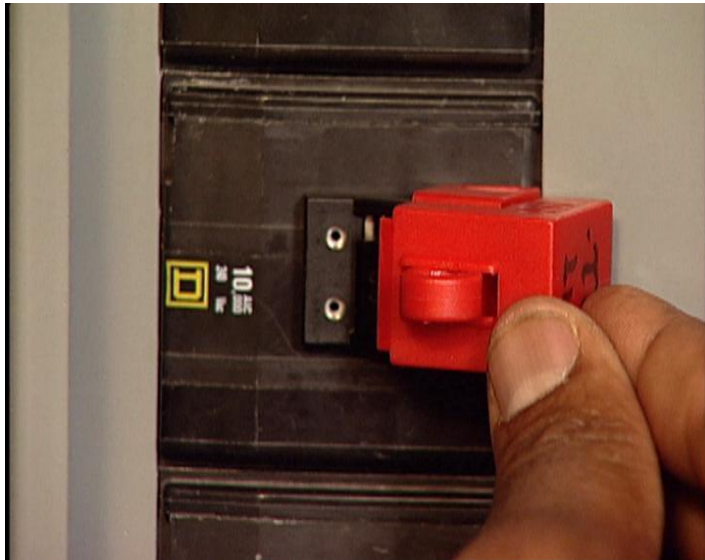
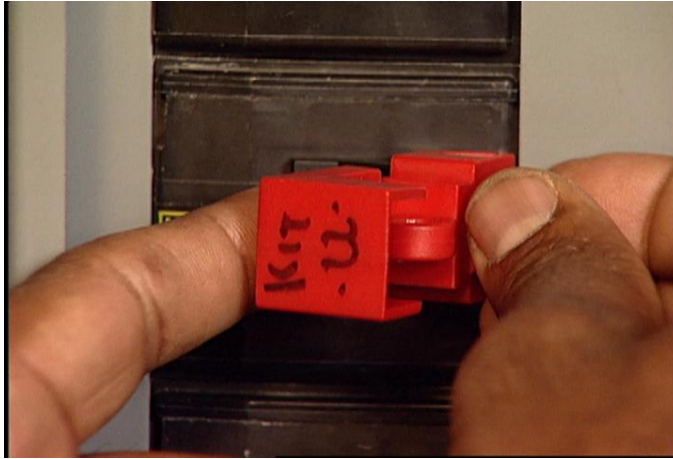
(included in yellow canvas locking carrying bag)

- 6 each- single pole breaker lockouts; 220 volt breaker lockouts; universal multi-pole breaker lockouts; wall switch lockouts
- 1 each - large - Brady plug lockout; small - Brady plug lockout
- 3 each - red labeled lockout hasps
- 2 each - 3/4" blue padlocks; 2" blue padlocks
- 10 each - lockout tags

LOTO Devices



Example of Device Application



Step 4 (cont): Tagout Device Application

- Indicate operation is “off”.
- Attach to lockout device.
- **Complete accurately and legibly:**
 - Authorized employee name
 - Date of lockout / tagout
 - Equipment identity

Step 5: Removal of Stored or Residual Energy

- Bring the equipment to “[zero energy state](#)”.
 - Install ground wires
 - Block parts that could fall
 - Relieve pressure on lines
 - Dissipate thermal energy
 - Monitor stored energy

Secondary Stored or Residual Energies

These may include:

- Electrical
- Pneumatic
- Gravity
- Chemical
- Thermal

Step 6: Verification of Isolation

- Verify isolation of equipment has been accomplished.
- Press start or control buttons or switches.
- Observe for movement, lights, or other indications.

3 Step Release From Lockout / Tagout

1. Inspect the area

- Remove tools.

2. Notify all Affected Personnel

- Ensure employees are safely located.

3. Remove Locks and Tags

- Authorized employee removal of lockout devices.
- Restore power to equipment.

Tagout Only Procedures

- Must provide equivalent protection as lockout device.
- Includes additional precautions:
 - Blocking of control switch
 - Opening extra disconnect
 - Removing an isolating circuit element

Examples of Where LOTO May Be Required

- Power Distribution Service Cabinets
- Inverters
- Bypass Switches
- Voltage Interface Units
- Lights and Receptacles
- Circuit Breakers, etc.
- AMF Panel of Diesel Generator (Installation and Commissioning)

Special Situations

Temporary removal of LOTO for tests / calibration.

- Clear away tools
- Notify affected employees
- Remove locking device
- Energize equipment
- Perform test or calibration
- De-energize and reapply LOTO (Example: De-energize before replacing equipment covers after testing).

Special Situations (cont.)

LOTO removal by other than authorized employee.

- Verify authorized employee is not available.
- Make reasonable efforts to contact.
- Notify authorized employee prior to resuming work.

Subcontractor requirements for LOTO

PM Role

- Overall, ensure all safety rules are being followed on the project.
- Ensure Subcontractor has knowledge and training of LOTO Program and Procedures
- ALU LOTO Procedure Form can be shared with the subcontractor
- For jobs requiring Electrical work, ensure that a Risk Assessment has been conducted for Electrical Safety (ALU Risk Assessment Tool can be shared)
- Periodically review the Subcontractor's LOTO Procedures when onsite using the LOTO Review Form.

Subcontractor Role

- Conduct a Risk Assessment to identify hazards and energy sources.
- Adherence to LOTO procedures required each time energy source is identified as part of the work to be performed and the employee is going to be exposed to it.
- Document LOTO procedure and make available to ALU upon request.
- Use ALU LOTO procedure Form if none available.

Shift Change Procedures

The Lockout/Tagout must remain in place.

- The in-coming authorized employee must place his/her lockout device on the multiple lock hasp before the present employee removes his/her lockout device.

Periodic Inspection

Ensures procedures and requirements of the standard and LOTO program are followed.

- Recommend reviewing the program at least annually
- Performed by supervisor or authorized employee.

- Review should include
 - Review of LOTO procedures.
 - Review responsibilities.
 - Correction of deviations.
 - Certification that inspections are performed.
 - Date, Equipment ID
 - Employees involved, Certifier
 - Retraining if deviations found.

Supervisor Responsibilities

Ensure employees not injured while working on or around equipment.

- Lockout / Tagout procedures
- Training, re-training, documents
- Equipment specific procedures
- Equipment and supplies

Authorized Employee Responsibilities

- Follow the defined Lockout / Tagout procedures as presented in this training program

Training

Serves to ensure:

- The purpose and function of the energy control program is understood.
- The knowledge and skills are acquired.

Training - Authorized Employee

- Understand purpose and function of energy control program.
- Recognize hazardous energy sources.
- Determine type and magnitude of energies.
- Know methods necessary to isolate and control energies.

Training - Affected Employee

- Must be able to recognize when LOTO is in use; and shall understand the purpose of this energy control procedure.
- Must also be instructed on the prohibition to restart machinery that is locked and/or tagged.

Re-Training

- Re-establishes proficiencies and introduces new or revised methods.
- Is provided when a new equipment or process hazard is introduced.
- Is provided when there is a modification in the energy control program.
- Is performed when periodic inspection reveals a deviation or inadequacy.

Summary

- Utilize LOTO to ensure a system is de-energized before beginning maintenance and/or servicing.
- Follow documented procedures and Basic Electrical Safety practices should this not be possible.
- Follow up with your local EHS Resource to get more information of Lockout Tagout kits and arrange for a demonstration on use.

Questions or Comments?

Contact:

- Your local EHS Coordinator for LOTO kit selection and demonstration.

Regional EHS Leaders

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