

# Energy Control Program Lock-Out/Tag-Out

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# Training Program Outline

## What is an Energy Control Program?

- Hazardous Energy Sources
  - Electrical Hazards and Electrocution (Handout )
- Energy Isolation Devices
- Lockout/Tagout Devices
- The Limitations of Tagout
- Authorized vs. Affected Employees

## Energy Control Procedures

- Application of Controls-the 5 Steps
- Returning Equipment to Service-the 4 steps
- Temporary Removal of Lockout/Tagout Devices
- Contractor Notification

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# What is an Energy Control Program?

- An Energy Control Program establishes procedures for locking or tagging out equipment for repair or service in order to prevent injuries from the unexpected start-up of equipment, or from the release of **stored energy**
- Examples of **stored energy**
  - Electricity
  - High pressure gases or liquids
  - Hydraulics
  - Steam
  - Pneumatic

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## What is Energy Control? (continued)

- This program covers all employees whose duties require them to service, install, repair, adjust, lubricate, inspect, or perform work on powered equipment which may have the potential for stored energy
- All work performed on corded or plugged electric equipment is excluded from lockout/tagout procedures **only if employee has complete control over the plug**

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## **Did you know....?**

OSHA estimates that approximately:

- 120 fatalities
- 28,000 serious injuries
- 32,000 minor injuries

could be prevented each year if proper lockout/tagout procedures were used

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## **Authorized vs. Affected Employees**

- **Authorized employees** may lockout or tagout a piece of equipment to perform maintenance or service
- **Affected employees** are those who work with or near equipment that may be locked or tagged out during servicing or preventative maintenance
- **Only authorized employees may apply or remove locks or tags to equipment at the University of New Haven**

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# Energy isolating devices

These devices isolate energy by disconnecting the supply line between the energy source and the piece of equipment



**Knife Switch**



**Valve**



**Circuit Breakers**



**Plug**

# Lockout Devices

- Locks, hasps or covers that prevent the start-up of equipment
- Secured so they will hold the energy isolating devices in a "safe" or "off" position
- The preferred method to lockout equipment over tagout devices
- Locks will have the name of the person who locked out the piece of equipment





# Examples of Lockout Devices



**Valve**

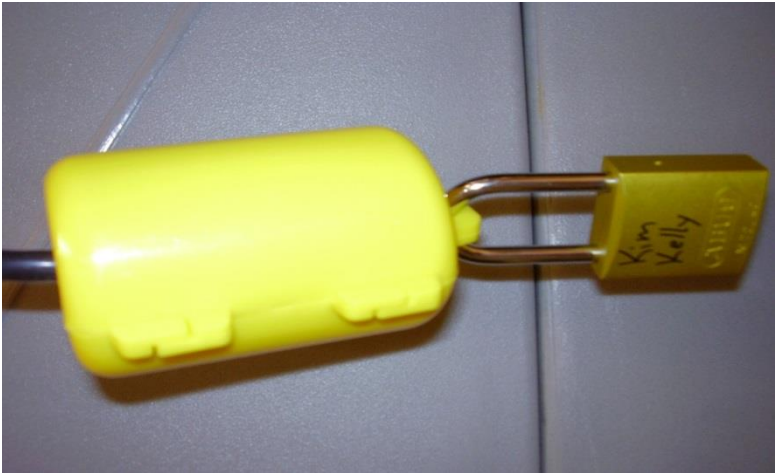


**Locked out with valve  
cover**

# Examples of Lockout Devices



**Plug**



**Locked out with plug cover**

# Examples of Lockout Devices



**Knife Switch**



**Locked Out with Hasp & Lock**

# Tagout Devices

- Are a prominent warning, such as a tag or sign
- Are used to show that movement of energy isolating device from the "safe" or "off" position is not allowed
- Tags or signs will read “**DANGER, DO NOT START**” and will show the name of the person who tagged out the piece of equipment



# The Limitations of Tagout

- Tags are warning devices and do not provide the physical restraint that a lock would
- Tags may provide a false sense of security
- Tags may become detached during use
- Never use a tag where a lock can be applied

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# What do I do if I need to use a locked or tagged out piece of equipment that I did not lock or tag?

- Never attempt to restart or energize the piece of equipment!!
- A lock or tag may only be removed by the person who applied the lock or tag
- In the event this person is absent only Authorized Employees may remove the lock or tag
- Authorized Employees will put stops in place to warn the employee that their lock or tag has been removed in their absence

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# Energy Control Procedures

## Application of Controls-The 5 Steps

### Step 1

### Prepare for shutdown

- Locate all energy source(s) and determine how to control them
- Assemble applicable lockout/tagout devices - locks, tags, hasps, etc.

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# Application of Controls-The 5 Steps

## Step 2

### Shut Down the Piece of Equipment





# Application of Controls-The 5 Steps

## Step 3

**Isolate all energy sources and apply  
lockout/tagout devices**



# Application of Controls-The 5 Steps

## Step 4 Release Stored Energy

- Relieve
- Disconnect
- Restrain



# Application of Controls-The 5 Steps

## Step 5

## Verify

- Check that all steps have been completed
- Inform affected employees of testing
- Press all start buttons, levers, etc.
- Turn back to “off”

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# Returning Equipment to Service-The 4 Steps

## Step 1

### Restore Equipment to Normal Operating Status

- Pick up all tools
- Replace all guards
- Re-install all parts removed for servicing or maintenance

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# Returning Equipment to Service-The 4 Steps

## Step 2

### Verify Equipment is Ready for Operation

- Inspect area for non-essential items
- Ensure that all employees are safely positioned away from the piece of equipment
- Post a watch if energy isolation devices are not in the line of sight of the piece of equipment

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# Returning Equipment to Service-The 4 Steps

## Step 3

### **Notify Affected Employees of Impending Start-up**

- The sudden noise of start-up may startle nearby employees

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# Returning Equipment to Service-The 4 Steps

## Step 4

### Remove Energy Isolation Devices

- Replace fuses and close circuit breakers
- Remove locks and tags
- Remember only the employee who installed the lockout/tagout devices may remove the devices

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# Temporary Removal of LO/TO Devices

In situations when equipment must be temporarily energized for testing the following steps must be followed:

- Clear the equipment of tools and materials
- Ensure the equipment components intact
- Ask employees to move from the equipment area
- Remove the lockout/tagout devices
- Energize and proceed with testing
- De-energize all systems and re-install all energy control measures
- Verify re-installed energy control measures are effective

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# Annual Evaluation of the Energy Control Program

- Consists of one or more inspections of actual lockout/tagout procedures
- A review of the authorized and affected employees' responsibilities
- The inspection may be performed by any authorized employee, except the one utilizing the lockout/tagout procedure being inspected
- A record is maintained of program evaluation

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# Training

- Training is provided to employees changing status from affected employee to authorized employee
- Retraining of authorized employees occurs if there is a change affecting the lockout/tagout procedures
- Training occurs when new equipment is purchased

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# Following Lockout/Tagout Procedures Can Save Lives!

## Do not take shortcuts

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# Questions?

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