

Applicable Forms:

- Energy Control Procedure
- LOTO Checklist
- Authorization for Higher Risk Isolation Form

Energy Isolation

Field Reference Tool



Life Critical Expectations

Energy Isolation

Verify isolation and zero energy before work begins

- I identify all hazardous energy sources associated with the task.
- I confirm that hazardous energy sources have been isolated, locked, and tagged; following lock and key control requirements during the task.
- I confirm that there is no residual or stored energy prior to starting the task.



Life Critical Failure Examples

- A technician failed to properly lockout/tagout/tryout equipment when they did not check for residual pressure before removing a valve.
- A mechanic was observed breaking open a flange on a pump system while on a Marathon location. The correct valves were closed but not locked or tagged.
- A mechanical plug was installed inside a pipe as a secondary barrier to isolate flammable vapors in preparation for hot work. The mechanical plug failed, as it was not designed for hot work, allowing the vapors to ignite and ejecting the plug from the pipe.

Identify all Hazardous Energy Sources

Energy Type	Examples	Cold Work	Non-Spark Producing Hot Work	Non-Hazardous Confined Space Entry	Spark Producing Hot Work	Hazardous Confined Space Entry
Corrosive	Acid or caustics	Lockout			Physical disconnect or blind	
Hydrocarbon	Oil, fuel gas, or produced water					
Non-Flammable	Fresh water or utility water	Lockout				Physical disconnect or blind
Utilities	Instrument air					
Electricity	Motor circuits (breaker panels,) busbars, battery circuits, feeds, or control circuits	Lockout				
Hydraulic	Hydraulic motors or other hydraulic systems	Lockout			Physical disconnect or blind	
Pneumatic	Air driven actuators					
Other	Miscellaneous hazards not otherwise classified					
Mechanical	Pumping unit counter weights	Physical restraint				
Static	Cathodic protection	Jumper/bonding cable or lockout	Physical disconnect			

Lock and Key Control Requirements

Lock Type	Applied By	Specifications and Application	Color
Personal Lock	Marathon Authorized Employees	<ul style="list-style-type: none"> • Personal locks are blue and keyed individually with only one key. • Accompanied by a tag identifying employee who applied it and their contact phone number. • Placed on the energy isolation device by the individual and the key remains under the sole control of the person who applied the lock. 	
Equipment Lock	Marathon Authorized Employees	<ul style="list-style-type: none"> • Equipment locks are yellow and keyed individually or alike with only one key. • Used to secure an individual energy source or energy isolation device. • Accompanied by a tag identifying the employee who applied it, the date the lock was applied, and the purpose for the lockout. 	
Job Lock	Task Supervisor	<ul style="list-style-type: none"> • Job locks are black and are keyed alike for each department or team. • Used to verify the continuity of energy isolation during a multi-shift operation and are typically placed on a group lockbox or hasp. The key to the job lock is controlled by the Task Supervisor from each shift. • The job lock is the first lock on and the last lock off when group lockout devices (lock box, hasp, etc.) are used and the job is not completed within the shift. • Accompanied by a tag identifying the employee who applied it and their phone number. 	

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LO/TO Exempted Activities

- Work on cord and plug connected electrical equipment.
- Long term isolations.
- Hot tap operations or in-service welding.
- Controlled releases.
- Isolations on wells during drilling, completion, and well servicing.

Authorized Employee

A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment.

Affected Employee

- Responsibilities include: the operation or use of a machine or equipment on which servicing or maintenance is being performed under lockout/tagout (LO/TO) but who is not involved in the work being performed under the energy isolation;
- Not involved in the work being performed under the energy isolation but whose activities may be impacted by the isolation;
- Not involved in the work being performed under the energy isolation, but whose job requires them to work in such proximity to the isolation that there is a potential for exposure to the release of hazardous energy.

Individual LO/TO Method

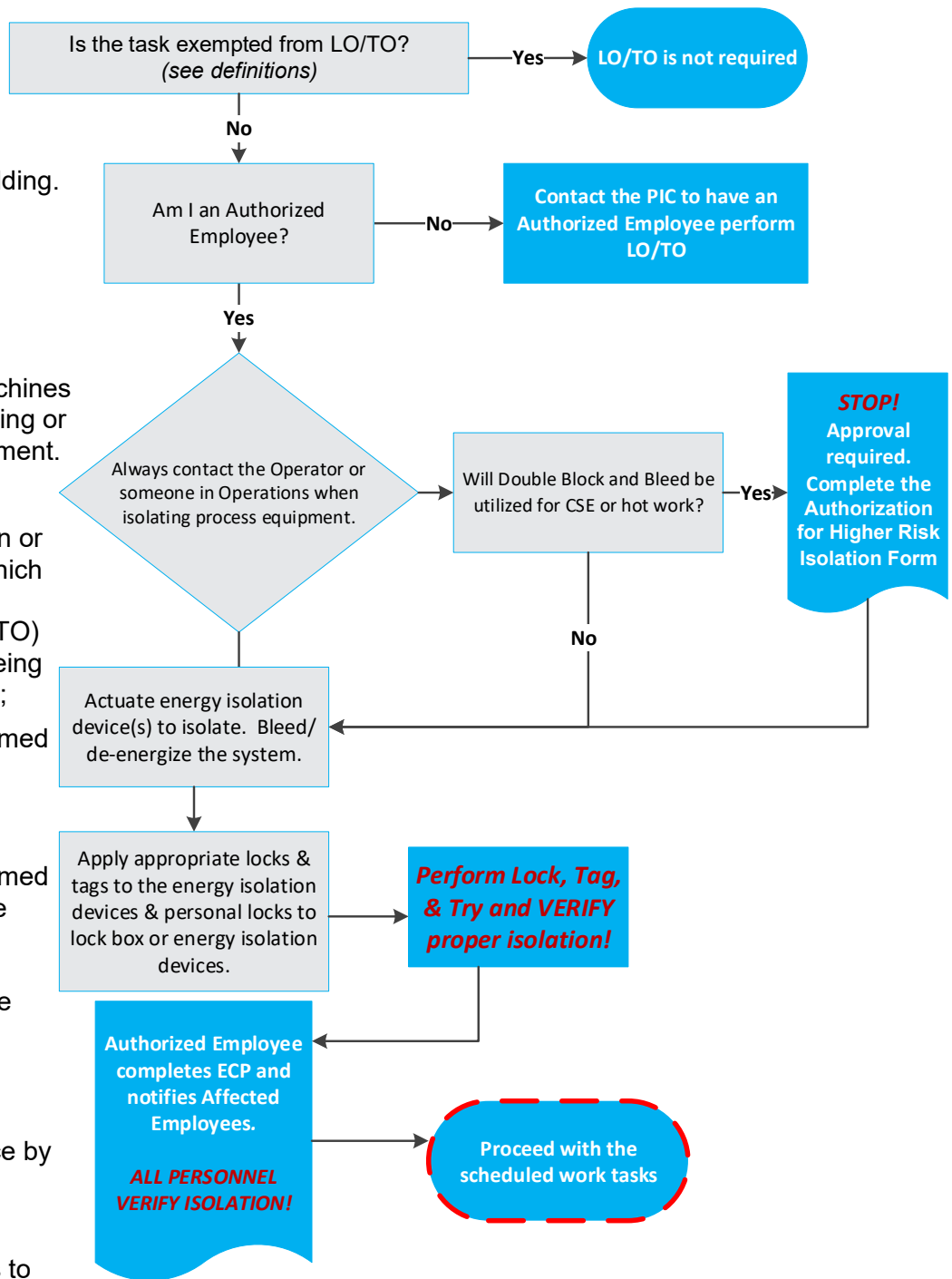
Achieved by attaching personal locks and tags to each energy isolation device by each Authorized Employee.

Group LO/TO Method

Achieved by attaching equipment locks to each energy isolation device by an Authorized Employee and personal locks attached to a group lock box.

Double Block & Bleed

Isolating a line or pipe by closing and locking and tagging two in-line valves upstream and downstream of the isolation to all energy sources and by opening, locking & tagging a bleed/drain valve.



Notes

- Hazardous confined space entries & spark producing hot work on equipment require: disconnect, blinding or double block and bleed.
- Dissipate stored energy.
- Verify the energy isolation!
- Blinds must be rated/certified for the MAOP & have a 2-part tag attached.
- Push button/selector switches are not energy isolation devices.