



# LOCK-OUT / TAG-OUT / TRY-OUT RSMT

OSHA and H&P standards for Lock-Out / Tag-Out / Try-Out help prevent start up of equipment, control stored energy and hazards, and highlight associated hazards with various energy forms to control or remove SIF exposures.





**To protect employees, H&P has developed Lock-Out / Tag-Out / Try-Out procedures that MUST be used and followed EVERY TIME work must be done on an energized piece of equipment.**

- prevent start-up of equipment, ensuring machinery is fully stopped, disabled and rendered inoperative
- eliminate/control stored energy and hazards associated with unexpected energy release
- highlight the hazards associated with various energy forms

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## WHEN IS LO/TO/TO REQUIRED?

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**LO/TO/TO is required before conducting any task which exposes employees to dangerous energy. These tasks include:**

- Repairing
- Taking out of service
- Operations requiring removal or bypassing of a physical guard or safety device (i.e. troubleshooting, inspecting, maintaining)
- Operations requiring placing any body part in a hazardous area during the operating cycle of the machine (i.e. mud pump pistons, mud pump drive belts, centrifugal pump drive shafts, pipe delivery system, wire rope drum)

## WHAT TYPES OF ENERGY MUST BE LO/TO/TO?

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**Forms of energy and power sources include:**

- Electrically powered: including motors and pumps
- Pneumatic/air-driven: including air starts and valves
- Hydraulic driven: including BOPs, Top Drive & hydraulic Rams
- Steam/thermal: including high or low temperatures & steam guns
- Chemical: including any chemical that is: Corrosive, Explosive, Flammable or Toxic
- Stored: including springs in compression, electrical, capacitors and elevated or suspended objects
- Mechanical energy: including any moving machinery.

Systems that may contain stored energy or trapped pressure include:

- Lines that are used for high pressure drilling fluid
- Compressed gas or air tanks, lines and fittings
- Hydraulic lines and components
- Any type of hoisting
- Resistor grids in electrical systems

## ENERGY ISOLATION

**All forms of energy must be isolated before work can begin. The Authorized Employee will place energy isolation devices (i.e. locks, hasps, pins, chains, etc.) to prevent the release of energy.**

Isolation methods include:

- Opening breakers
- Turning on manual switches
- Opening bleed off valves
- Unplugging plugs
- Installing blanks



Equipment or machinery with a single power source, but remote start and/or stop controls, must be isolated at the single power source in the VFD, MCC, or MCR.

Equipment or machinery with multiple energy sources must have all potential energy sources isolated.

## WHO IS INVOLVED IN LO/TO/TO?

**Lock-out / Tag-out / Try-out involves two types of employees with different levels of responsibility:**

### **Affected Employee**

The person doing the actual work and at risk from hazardous energy.

- They will assist in verifying that equipment is locked, tagged and tried before starting work.
- They will not attempt to operate equipment.

### **Authorized Employee**

The person responsible for proper LO/TO/TO on an H&P location.

- Must be approved in writing by Superintendents to actually perform LO/TO/TO, this includes: Rig Managers, Toolpushers, Tourpushers, Drillers, Derrickmen, Motormen.



**All Authorized Employees must be documented on the Authorized Employee List; which will be displayed in critical areas around the rig.**

Mechanics, Electricians, BOP Techs, and CRT Techs ARE NOT authorized to perform LO/TO/TO; UNLESS they are assigned to an individual rig, full time, and designated in writing by the Drilling Superintendent for that rig.

**Rig crew members, including the Authorized Employee, ARE NOT authorized to perform electrical work.**

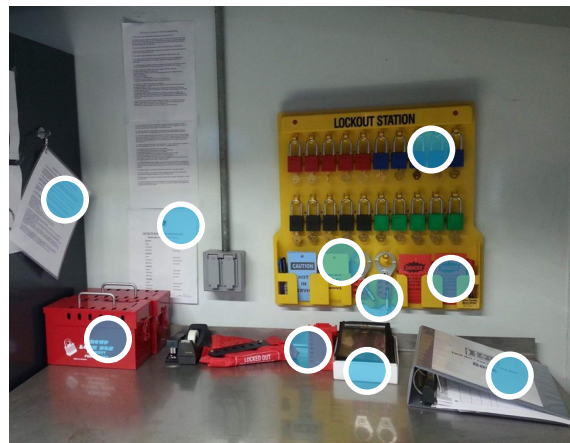


Rig electricians will be called out to perform ALL electrical work on the rig. Only qualified personnel will perform electrical work or repairs.

# LO/TO/TO STATION

Each rig will have a LO/TO/TO station located in the Driller's cabin. All equipment, LO/TO/TO book, paperwork, and a printed copy of the LO/TO/TO 20 steps will be placed at the LO/TO/TO Station.

The LO/TO/TO book, associated documents, and lock boxes will not leave the Driller's cabin.



<b>Group Lock Box (Ammo Box)</b>	<p>The main keys for energy isolation will be placed in this box.</p> <p>Each employee involved in the LO/TO/TO must have their own lock placed on this box and keep their key with them at all times while the work is being performed.</p>
<b>Authorized Employee List</b>	<p>This list shows all employees that are authorized to perform LO/TO/TO on your rig.</p> <p>If a name is not on this list, that employee is not authorized.</p>
<b>H&amp;P's 20-Step Procedure</b>	<p>H&amp;P's 20-Step Procedure can be used to reference during a LO/TO/TO.</p> <p>This procedure explains the steps that must be taken to safely complete a LO/TO/TO.</p>
<b>Lock-out Devices</b>	<p>This includes plug bags to lock out electrical plugs and valve covers to lock out valve handles that don't have a built in locking mechanism.</p> <p>These are just 2 common examples. There are many different devices that can be used for different applications.</p>
<b>Personnel Locks</b>	<p>Personnel locks are provided for all H&amp;P and 3rd party employees that may participate in work that requires a LO/TO/TO.</p> <p>These locks are color coded for different positions, and are to be locked onto the group lock box.</p>
<b>Hasps</b>	<p>Hasps will be connected directly to buttons, switches and valves that must be locked out.</p>
<b>Brass Equipment Locks</b>	<p>Brass locks will be locked on to the hasp to effectively disable the energy source.</p>
<b>Tags</b>	<p>There are 3 different tags utilized that must be connected to each equipment lock, to quickly communicate the type of LO/TO/TO that is being completed.</p>
<b>Tag Sleeves</b>	<p>Tag sleeves must be used for each tag to protect the tag and prevent it from being pulled off of the lock.</p>
<b>LO/TO/TO Book</b>	<p>LO/TO/TO paperwork will be kept within the procedure book</p>





# PERSONNEL LOCK ASSIGNMENTS

Different positions and/or crews will have their own colored lock to help quickly communicate who has locked out a piece of equipment or system.

Red  
Blue  
Yellow  
Green  
Black  
Orange  
Purple  
Teal

Crew #1  
Crew #2  
Crew #3  
Crew #4  
Rig Manager  
Electricians  
Mechanics  
Third Party



# LO/TO/TO LOG RECORD SHEET

All LO/TO/TOS will be documented using a **LO/TO/TO Log Record Sheet**. LO/TO/TO Documentation will stay in the Driller's Cabin at the LO/TO/TO Station.

On this form the Authorized Employee will document:

- date
- equipment persons involved hazard
- control steps completed time cleared
- **Sheets may only be transferred to another Authorized Employee 1 time.** This will commonly be done at crew change.

HELMERICH & PAYNE INTERNATIONAL DRILLING CO.  
LO/TO/TO LOG RECORD SHEET  
Hoja de Registro de Bloqueo, Etiquetado y Probado (BL/ET/PR)

Certificate No. \_\_\_\_\_ Rig No. \_\_\_\_\_

1. Location and Nature of Work: To be filled out by the Authorized Employee / Lugar y Naturaleza del Trabajo: Para ser completado por el Empleado Autorizado

Equipment to be worked on: \_\_\_\_\_ Nature of Work: \_\_\_\_\_ Location of Work: \_\_\_\_\_  
Well Site Name and Number: \_\_\_\_\_ Operator: \_\_\_\_\_ Other: \_\_\_\_\_  
Date of Permit Issue: \_\_\_\_\_ Time of Permit Issue: \_\_\_\_\_ Date Permit Expires: \_\_\_\_\_ Time Permit Expires: \_\_\_\_\_  
Form to be filled out by 6:00 AM (10:00 AM for AEP/PA) / Formulario de llenado por 6:00 AM (10:00 AM para AEP/PA)

2. Safety Precautions / Precauciones de seguridad

Local Area Authority: Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date and Time: \_\_\_\_\_  
Authorized Area Local: \_\_\_\_\_ Name: (Driller/Chief Supervisor/Rig Manager) \_\_\_\_\_ Date and Time: \_\_\_\_\_  
All affected employee(s) notified of the intent of LO/TO/TO: \_\_\_\_\_ Was a JSA Reviewed? \_\_\_\_\_  
If yes, which JSA was reviewed? \_\_\_\_\_ Shift change transfer occurred: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
I confirm all isolation is correct as per LOTOTO procedure. / Yo confirmo que todos los aislamiento están de acuerdo con el BL/ET/PR. Print & Signature: \_\_\_\_\_  
Authorized Area Local: \_\_\_\_\_

3. Type and Description of the Isolation / Tipo y Descripción del Aislamiento

Lock No. / Candado No.	Electrical Isolation Details / Detalles del Aislamiento Eléctrico	Location / Lugar	Isolation / Aislamiento	Isolation / Aislamiento	Isolation / Aislamiento	Isolation / Aislamiento
			Date / Fecha	Time / Hora	Date / Fecha	Time / Hora

Stored energy released: \_\_\_\_\_ Equipment locked out/tagged out at primary power source: \_\_\_\_\_ Equipment locked out/tagged out at secondary power source: \_\_\_\_\_ Equipment tried and tested to verify effective isolation: \_\_\_\_\_  
Energía almacenada liberada: \_\_\_\_\_ Equipo bloqueado / etiquetado a nivel a la fuente de energía primaria: \_\_\_\_\_ Equipo bloqueado / etiquetado a nivel a la fuente de energía secundaria: \_\_\_\_\_ Equipo intentado y probado para verificar aislamiento eficaz: \_\_\_\_\_  
I hereby certify that all the above electrical isolations have been carried out as indicated. / Yo certifico por la presente que todos los aislamientos eléctricos anteriores se han realizado como se indica.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date and Time: \_\_\_\_\_  
Authorized Employee: \_\_\_\_\_

4. Affected Employees / Empleados Afectados

Original Affected Employee / Empleado Afectado Original	Transfer of Affected Employee / Transferencia de Empleado

All affected employee(s) were notified of LOTOTO in place, have a look on the group lock box or heap and have recorded their name(s) on this form and the tag attached to the lock box. / Todos los empleados afectados fueron notificados de que el BL/ET/PR fue realizado y ellos tienen su candado colocado en la caja de bloqueo o en la lista de bloqueo y sus nombres están en este certificado.

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Revision: 06  
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# LO/TO/TO TAGS

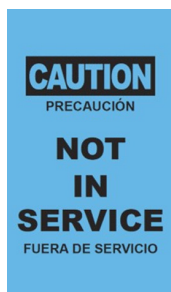


On H&P locations, we use 3 types of tags to communicate different tasks. These tags communicate:

## LO/TO/TO

Red Tags are used for maintenance, service and repairs. They must be present on every lock involved in these activities.

- LO/TO/TO Log Record sheets and Red Tags ARE transferable if the work can not be completed before the end of the tour.



## Not In Service

Blue, NIS tags will be used on equipment that will be locked out for an extended time.

- NIS tags (Blue), will be replaced as needed. Rig Manager will verify at the start of hitch and update the Not In Service log as needed.
- All NIS keys to the breakers will be kept in the Rig Manager's trailer.



## Rig Move

Yellow tags are used during rig moves.

- All breakers and switches will be LO/TO/TO prior to removing power cables from the receptacles during preparations for rigging down.
- Keys to rig move isolation will be placed in a group lock box with Rig Manager AND Authorized Employee having two-man control of access to those keys with their locks on the outside of the group lock box.



All employees working on equipment must have a lock on the group lock box prior to starting work and keep their key with them at all times until the work is completed.



Keys cannot be handed off to the Authorized Employee or any other employee for any reason.

**You must remove your own lock.**





## THE 20-STEP PROCESS

**H&P uses a 20-Step process for LO/TO/TO to ensure that all dangerous energies have been released from a piece of equipment or system and it is safe to be worked on.**

1.	Affected Employee(s) notify Authorized Employee of need to LO/TO/TO.
2.	Authorized Employee logs the equipment being locked-out on the LO/TO/TO record sheet kept at the LO/TO/TO Station.
3.	Authorized Employee gathers all necessary LO/TO/TO materials to isolate energy sources.
4.	Authorized Employee notifies all Affected Employees that equipment or system will be shutdown, locked-out, and reason for LO/TO/TO.
5.	Authorized Employee identifies the proper controls, breakers, switches, and/or valves, deactivates them, and physically isolates them with a lock in the o or safe position. This includes primary and secondary power sources where present.
6.	Authorized Employee completes the Lockout Tag.
7.	<p>As needed or as appropriate to remove stored energy:</p> <ul style="list-style-type: none"><li>• Qualified electrician releases any stored electrical energy and applies a voltage detecting device to verify that the circuit is completely de-energized.</li><li>• Authorized Employee releases any hydraulic or pneumatic stored energy (i.e. air pressure, compressed gas, hydraulic pressure, fluid pressure, etc.) through bleeding, draining, disconnecting, and/or venting.</li><li>• Authorized Employee releases any mechanical stored energy (spring under compression, elevated machine parts, objects suspended overhead, rotating flywheels, etc.) through controlled release, lowering suspended parts, repositioning, or physical blocking with chains, brackets or pins.</li></ul>
8.	Authorized Employee ensures all Affected Employees are at a safe distance, then function tests (TRIES) local and remote operating controls.
9.	Authorized Employee returns all switches to the o or safe position after TRYING.
10.	Authorized Employee notifies the Affected Employees that the proper equipment has been Locked-out, Tagged-out, and Tried-out.
11.	Affected Employees (or at least one member of the work team) verify the Authorized Employee has Locked-Out, Tagged-Out, and Tried-Out the correct equipment.



<b>12.</b>	<p>Authorized Employee places the actual isolation keys in the Group Lock Box. Authorized Employee attaches their lock followed by all Affected Employees attaching their locks on the outside of the Group Lock Box. (For land rigs, Driller/Crew Supervisor will place his lock on the group lock box as the overall supervisor for his crew.)</p> <p>Each person retains the key to their lock. The name of each Affected Employee with a lock in play must be recorded on the LO/TO/TO record sheet.</p>
<b>13.</b>	<p>Affected Employees perform the maintenance, repair, or servicing.</p>
<b>14.</b>	<p>All Affected Employees inspect the work area to confirm:</p> <ol style="list-style-type: none"><li>1. All tools, blocks, braces, pins, and non-essential items are removed.</li><li>2. Machine guards and protective features are reinstalled.</li><li>3. Equipment is operationally intact, properly lubricated, and ready to operate.</li><li>4. Systems are properly connected and aligned for intended operation.</li><li>5. Personnel are positioned at a safe distance.</li><li>6. Personnel are wearing the correct personal protective equipment (PPE) for normal operation.</li><li>7. Equipment controls are in the off or safe position.</li></ol>
<b>15.</b>	<p>Affected Employees report the completion of the task to the Authorized Employee.</p>
<b>16.</b>	<p>All Affected Employees and the Driller/Crew Supervisor remove locks from the Group Lock Box.</p> <p>Authorized Employee removes all keys to the isolation devices.</p> <p>Authorized Employee notifies all Affected Employees in the work area that LO/TO devices are about to be removed.</p>
<b>17.</b>	<p>Authorized Employee inspects the area to confirm it is safe to proceed, then removes LO/TO devices and restores power or re-energizes the system.</p>
<b>18.</b>	<p>Authorized Employee notifies all Affected Employees that LO/TO devices have been removed and the equipment, machinery, or system is back in service or is ready to be repositioned or tested.</p>
<b>19.</b>	<p>Affected Employees energize and test the equipment or machinery to verify it is working safely.</p>
<b>20.</b>	<p>Authorized Employee returns LO/TO/TO materials to the LO/TO/TO Station and closes out the LO/TO/TO record sheet.</p>



## SUMMARY

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**By following all steps in the 20-Step procedure, you can greatly reduce your risk of injury while working on equipment and systems around the rig.**

If the Authorized Employee listed on the LO/TO/TO Record Sheet is NOT on-site, the Rig Manager will personally verify it is safe to re-energize equipment and supervise the removal of the LO/TO by someone other than the original Authorized Employee who performed the LO/TO. This may NOT be delegated to any other person.

## THINGS TO REMEMBER

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**All Lock-Out / Tag-Out / Try-Outs can be completed safely when following the procedures properly. Remember:**

- 1** LO/TO/TO must be performed on **ANY** equipment which has the potential to release stored energy.
- 2** Rig crew members, **including the Authorized Employee**, ARE NOT authorized to perform electrical work, such as rewiring plugs or splicing cables.
- 3** **All personnel** (Crews, Maintenance and 3rd Party) working on equipment that has been LO/TO/TO must place their own lock on the group lock box and keep their key with them at all times.
- 4** The Affected Employees must **(Try-Out)** verify that equipment will not start before working on or near it.

If you are unsure of how to properly LO/TO/TO a piece of equipment, have questions or concerns about a LO/TO/TO, and/or suspect that a task is unsafe, notify your supervisor immediately. Never take chances when it comes to Lock-Out / Tag-Out / Try-Out.