**Safe Work Requirement**

LOCKOUT / TAGOUT PROCEDURE

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| PURPOSE The purpose of this procedure is to explain proper lockout / tagout procedures. APPLICATION This procedure applies to all personnel when servicing and performing maintenance on machines and equipment, in which the unexpected energy, or start up or the release of stored energy could cause injury. This procedure specifies minimum requirements for the control of hazardous energy.  This program does not apply to:   1. Hand held power tools or stationary equipment whose electrical power may be controlled by the unplugging of equipment from the energy source when the plug an d cord are under the control of the employee performing the servicing or maintenance. 2. Hot tap operations involving transmission and distribution systems when they are performed on pressurized pipelines, provided it can be demonstrated that: 3. Continuity of service is essential; 4. Shutdown of the system in impractical 5. Documented procedures are followed 6. Equipment is used which will provide proven effective protection for employees  RESPONSIBILITIES Supervisors will be responsible for ensuring that all equipment and energy sources are properly locked and tagged prior to starting work. DEFINITIONS **Authorized Employee:** - Is a person who uses the energy control procedure.  **Affected Employee:** - Is a person who works in an area in which the energy control procedure has been implemented.  **Energy Isolating Device:** - Is a mechanical device that physically prevents the transmission or release of energy.  **Energy Source:** - An energy source is any electrical, mechanical, hydraulic, pneumatic, gravitational, chemical, nuclear, thermal, or other energy source that could cause injury. PROCEDURE  1. All energy sources associated with equipment must be locked and/or tagged in the position which isolates the employee(s) from the hazardous energy when maintenance/servicing work is being performed by either company or contract personnel. 2. If all energy sources have been removed, (i.e., electrical power has been disconnected to a well site location, but a junction box remains), then a lockout device is not necessary. 3. Whenever contract employees are scheduled to perform work covered by this program, they must comply with the requirements of this procedure.  Lockout/ Tagout Procedures  1. Employees involved in the lockout must be knowledgeable of the type and amount of the energy, the hazards of the energy to be controlled, and the method or means to control the energy before turning off a machine or equipment. 2. Notify all affected employees (before and after) about the lockout/tagout procedure and the prohibition regarding attempts to restart or reenergize equipment locked/tagged out. 3. Machinery or equipment shall be turned off or shut down using the procedures established. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of equipment shutdown. 4. All energy isolating devices which are needed to control the energy to machinery or equipment shall be physically located and operated, as appropriate to isolate the machinery or equipment from the energy source(s). 5. Lockout the equipment with a personal lock approved by the supervisor in charge. The tag should be dated and signed by the person performing the work. 6. Lockout or tagout devices must be affixed to each energy or isolating device by the employee authorized by the supervisor in charge. The devices shall be attached in a manner that will hold the energy isolating devices in a "safe" or "off" position. 7. No lock shall be affixed without a tag stating who locked out the equipment and the date and reason it was locked out. 8. Tagout devices, where used, shall be attached to clearly indicate that the operation or movement of energy isolating devices from the "safe" or "off" position is prohibited. Where tagout devices are used with energy isolating devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached. Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as closely and safely as possible to the device, in a position that will be immediately obvious to anyone attempting to operate the equipment. 9. If more than one group is working on the same item (including different maintenance crafts) each authorized person from each craft will place a lock on the multiple hasp and will sign and date the DANGER, DO NOT START tag. Each craft or group will test at the start station to determine that the equipment is inoperable. 10. Following the application of lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, or otherwise rendered safe. If there is a possibility of re-accumulation of stored energy to a hazardous level, verification of isolation shall be continued until the servicing or maintenance is completed, or until the possibility of such accumulation no longer exists. 11. After ensuring that all personnel are clear, the equipment must be tested to verify that it is properly locked out and will not operate.   **Note:** Be certain to return the switch or START button, which was used to test the lockout, to its OFF or NEUTRAL position.   1. At the beginning of each shift, or after any substantial absence from the job (breaks or meals), any shift who has equipment locked out will check the equipment and the disconnecting device to determine that all equipment is safe for work and has not been returned to service during their absence  Specific Energy Isolation Procedures The following methods and devices will be used either separately or in a combination, depending on the equipment to lockout/tagout the following energy source(s):   1. **Electrical (Motor Controllers, Capacitors, Circuit Breakers, etc.)** 2. Shut down the equipment using the selector switch followed by the master disconnects. 3. Ensure that all power sources are locked and tagged out. 4. Stored electrical energy must be bled to obtain zero energy state. 5. When working on or near exposed de-energized electrical equipment, a qualified person shall use test equipment and shall use detector to ensure that all circuits are dead. 6. If additional energy sources are present follow the applicable method of energy isolation listed in this section. 7. **Pneumatic (Starting air, Control Valves, Instrument Air, etc.)** 8. Identify system to be isolated. 9. Close block valve(s) upstream and downstream of section. 10. Release pressure to reach zero energy state, utilizing a controlled bleed-off. 11. Use chains, energy isolation air valves, shut off valves, padlocks and lockouts to lockout energy source. Disconnecting the line is the preferred means of isolation. 12. If additional energy sources are present, follow the applicable method of energy isolation listed in this section. 13. **Hydraulic (Valve Actuators, Presses)** 14. Identify system to be isolated. 15. Isolate the system. 16. Release pressure to reach zero energy state. 17. Use lockout valves, chains, padlocks, and lockouts to lockout energy source. 18. If additional energy sources are present, follow the applicable method of energy isolation listed in this section. 19. **Fluids and Gases (Piping systems, Vessels, Production/Process Equipment, and Storage Tanks, etc.)** 20. Identify system to be isolated. 21. Isolate all inlet and outlet piping by disconnecting, inserting blinds, or use of double block and bleed. (Double block and bleed is not acceptable for confined space entry). 22. Release pressure to reach zero energy state. 23. If additional energy sources are present, follow the applicable method of energy isolation listed in this section. 24. Refer to Confined Space Entry Program. 25. **Mechanical (Pumping Unit, Counter Weights, Flywheels, etc.)** 26. Release all stored mechanical energy or block the energy. Be aware of gravity, springs, tension, and other sources of energy that are not always obvious. 27. Use blocks, pins, or chains to restrain energy when equipment cannot be brought to a zero potential energy state. 28. Padlocks, lockouts, and tags should be used to lockout and tagout mechanical energy. 29. If additional energy sources are present, follow the applicable methods of energy isolation listed in this section.  Restoring Service to Equipment  1. After each phase of the work is complete, the locks for that crew may be removed. The work area shall be inspected to ensure that nonessential items have been removed and that machine or equipment components are operationally intact. The work area shall be checked to ensure that all employees have been safely positioned or removed. The person authorized by the supervisor in charge will remove the last lock and release the "Do Not Start Tag" and notify the individual responsible for the plant or satellite equipment that the repairs are complete and ready for service. After lockout or tagout devices have been removed and before a machine or equipment is started, affected employees shall be notified that the lockout or tagout devices(s) have been removed. Contractors will not be authorized to return plant or satellite equipment to service. However, the Field, Production or Maintenance Supervisor may authorize contractors to return field equipment to service. 2. Each lockout or tagout device shall be removed from each energy isolating device by the employee who applied the device except when the authorized employee who applied the lockout or tagout device is not available to remove it, that device may be removed under the direction of operating supervisors. The removal of the device shall by the authorized employee who applied it. The following elements should be followed: 3. Determine conclusively the job has been completed and no personnel remain in the affected area. 4. Verify that the employee is not at the facility. 5. The supervisor in charge will ensure that the affected employee is notified that his lock has been removed before the employee resumes work at the facility. 6. The field, plant and platform foreman, maintenance or operations foreman, the employee's immediate supervisor, or the employee's relief are authorized to use the above procedure and then remove the lock/tag. 7. The individual restoring energy to the equipment must: 8. Inspect the work to ensure that nonessential items have been removed. 9. Ensure that the equipment components are operationally intact. 10. Check the work area to ensure all employees are safely positioned or removed from the equipment.  LOCKS AND TAGS Tag attachment devices should be of a non-reusable type, attachable by hand, self locking and non-releasable with a minimum unlocking strength of no less than 50 pounds. A one-piece all-environment tolerant nylon cable tie-type device is acceptable for this application.     ISOLATION SECURITY Isolation security must be to the facility manager’s satisfaction to take all reasonable steps that will ensure the continuing integrity of the isolation scheme.   1. **Double Block & Bleed**   Double block and bleed is the closing, locking and tagging of two line valves and draining/venting of the space between the valves using a bleed/vent valve.     1. **SPADE OR SPECTACLE BLIND**   A spade (also known as a slip plate or slip blind) is inserted between two flanges to block flow in that line. When that same line is in normal production service a slip ring is typically used as a spacer to hold the two flanges apart.     1. **FACE BLIND**   A blind flange is a metal plate with the same design specifications as the plant, equipment or systems into which it is installed. Face blinds are sometimes referred to as face blanks.  A blind flange can be a bolted blind at the end of a pipe run.     1. **USING PADLOCKS**   Critical isolations if they were removed by mistake could have serious and immediate consequences; consideration must be given to padlocks, which provide the highest level of isolation security. The lock key must be returned to the Isolation Control Centre where the isolation will remain in place for more than a single shift; otherwise the facility manager can hold the key pending de-isolation.    The key number/reference must be written on the isolation label so that the key can be easily traced to the relevant isolation point when the time comes to de-isolate.   1. **USING CAR SEALS**   Car Seals are only once used security devices, can be used to secure isolation points where this is more convenient than padlocks though the lower level of security provided by Car Seals must be considered. The facility manager must ensure a higher level of supervision when isolations protected by Car Seals are being de-isolated to ensure that only the Authorized Personnel have the Car Seals removed.     1. **USING NO SECURING DEVICE**   It is acceptable to simply tag an isolation point where the criticality of the isolation is considered low or other more secure methods are not practicable. For example, a low pressure water line where the only consequences of an erroneous de-isolation would lead to some wet ground.  Description: tags  **Note:** Tagging without securing is the lowest acceptable standard of isolation security. SHIFT CHANGE  1. Lockout/tagout protection must be continuous. 2. Lockout/tagout protection must have an orderly transfer between employees. 3. This means that the first employee’s lock remains in place until the next shift’s employee applies his or her lock  TRAINING  1. All employees who participate in the lockout/tagout program or who may be affected by the program must be trained prior to their participation in the program and annually thereafter. Each authorized employee shall receive training from the on-site HSE Representative and all training documentation shall be filed on the rig. Training shall cover the recognition of applicable hazardous energy sources, the type and magnitude of the energy available in the workplace, and the methods and means necessary for energy isolation and control. Each affected employee shall be instructed in the purpose and use of the energy control procedure. All other employees whose work operations are or may be in an area where energy control procedures may be utilized, shall be instructed about the procedure, and about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out 2. The training shall ensure that the purpose and function of the lockout/tagout program is understood and that the knowledge and skills required for the safe application, usage and removal of energy controls are conveyed to the employees. 3. Training should specifically encompass recognition of hazardous energy sources, type and magnitude of energy in the workplace, methods and means necessary for energy control and the purpose and use of the lockout/tagout program. The training shall also include rules and techniques to be used for authorization and the means that will be used for enforcement of the program. 4. Explanation of tags and their means of attachment. It should be emphasized that the tags and their means of attachment must be made of materials which will withstand the environmental conditions encountered in the workplace. Tags are essentially warning labels affixed to energy isolating devices, and do not provide the physical restraint on those devices that is provided by a lock. 5. Refresher training shall be provided whenever there is a change in the lockout/tagout program and whenever job changes or changes in equipment or processes present a new hazard. 6. All training must be documented, including the date and names of employees attending the training.  REFERENCES Permit to work Procedure. |