



**Berry Bros. General Contractors, Inc.
Corporate Policy Procedure**

Section # 48

Issue Date: 02-19-2009

**(HSE) Health, Safety & Environmental
Policies and Procedures Manual**

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LOCKOUT / TAGOUT (LO/TO)

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SUBPART A - PURPOSE

The purpose of this procedure is to ensure the neutralization of all applicable hazardous energy sources before performing work on any piece of equipment. While Lock-out procedures at many facilities mostly apply to electrical powered equipment, it takes far more than merely locking out electrical energy to achieve maximum protection. Personnel should be aware of all energy sources that may present a hazard, such as:

- Electrical
- Hydraulic fluids
- Pneumatic

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- Stored energy (electrical current, springs, etc.)
- Pressured pipelines / vessels
- Potential energy from suspended parts - gravity
- Any other sources that might cause unexpected mechanical movement

Note: In the event the customer / client has a Lock-out / Tag-out procedure, BBGCI will implement their procedures in conjunction with the following procedures and utilize the more stringent of the two policies

SUBPART B - REFERENCES

Title 29 Code of Federal Regulations (CFR) 1910.147


SUBPART C - DEFINITIONS

Lock

- When used in the following procedure, means a padlock, uniquely keyed, used for the purpose of locking out electrical circuits, switches, valves, control mechanisms, etc.
- The lock is to have one key held by the employee who installed the lock and another key, master key, held under lock and key by the Project superintendent or his designee.

Tag

- A tag will be used in conjunction with a lock or when a lock can not be physically used to isolate a device. A new tag shall be issued at the beginning of the tag-out/Lockout procedure.
- The tag must contain the following information:
 - Who the lock belongs to and his title & craft.
 - The date, time, and the location of where the tag/lock is to be installed.
 - A general description of the work scope.
 - An anticipated completion of work.

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SUBPART D - PRACTICES

This procedure is designed with four objectives in mind to ensure the safety of the crew during the scope of work. The four objectives are:

- Develop a written procedure to isolate equipment from its energy source. Identifies the equipment, the power sources, isolation points and the proper lock-out/tag-out procedure that will be followed.
- Testing equipment to ensure that the isolation is verified and to validate the written isolation procedure.
- Safety Precautions are in place in case of an incident or accident.
- Emergency support plan in place.

SUBPART E - PREPARATION FOR SHUTDOWN


Before an authorized or affected employee turns off a machine or equipment, the authorized employee shall have knowledge of the type and magnitude of the energy, the hazards of the energy to be controlled, and the method or means to control the energy. The machine or equipment shall be turned off or shutdown using the manufacturers established procedures. An orderly shutdown must be utilized to avoid any additional or increased hazards to employees.

THE WRITTEN ISOLATION PROCEDURE AT A MINIMUM WILL IDENTIFY ALL OF THE FOLLOWING:

Machine or equipment shutdown identification:

Machines owned and/or operated by BBGCI that need to be Locked-out prior to service:

- Site trucks, vehicles, and heavy equipment
- Site Office / Instrumentation Trailers
- Welding Machines
- Cranes
- Miscellaneous Equipment
- Temporary Power Panels

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- Distribution Panels and Switchgear

Client owned equipment and machinery that may be encountered in our operations:

- Distribution Panels and Switchgear (Various voltages)
- Variable Frequency Drives
- Electrical Equipment (Pumps, motors, transformers, etc.)
- Lights, switches, and receptacles
- Control panels and valves
- Distribution Control Systems (DCS)
- Instrumentation equipment

Machine or equipment isolation:

All power sources, including primary, secondary, temporary, or back feed sources along with a description as to the source, voltage, origination and designation points. A one line drawing that identifies the previous stated power sources and termination points (or access points).

Lockout or tagout device application:

Isolation points are to be identified by detailed description of their exact location and the method that will be used to isolate the points. "DO NOT OPERATE" tags will be placed at all isolation points (After Lock-out / Tag-out or disconnection).

Lockout devices, where used, shall be affixed in a manner so that they will hold the energy isolating devices in a "safe" or "off" position.

Tagout devices, where used, shall be affixed in such a manner and will 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.



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Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device, in a position that will be immediately obvious to anyone attempting to operate the device.

All required safety equipment (i.e., gloves, arch flash suit, FRC, arc face shield, rubber mats, hot stick, etc.) needed to perform this work must be identified as well as its location.

Stored energy:

Following the application of the lockout or tagout devices to energy isolating devices, all potentially hazardous stored or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe.

Verification of isolation:


A place for verification of signatures will include the supervisor craft personnel, superintendent, safety coordinator, project manager, and client shall be included with this procedure. Prior to this procedure being activated it shall be reviewed with all persons affected and involved.

The latest revised one-line drawing or schematic showing all points of isolation, the power sources (Including Temporary sources) and the actual work locations. (Needs to be site specific and labeled to where it enters the system and from where – to identify all lock-out points.)

Note: The following should participate in the verification of the isolation procedures:

- | | |
|---------------------------------------|-----------------|
| Foreman | Superintendent |
| Safety Coordinator | Project Manager |
| Project Manager | Craft Personnel |
| Client Representative (If applicable) | |

The supervisor responsible for each lock-out / tag-out operation will control the device until the work is complete, verified safe, and the lock-out device(s) are removed for re-energization of equipment.

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Testing of the equipment to ensure that the isolation is verified and to validate the written isolation procedure:

A competent experienced person using the proper test equipment shall test and verify that all applicable circuit(s) is/are de-energized and safe to accomplish the work identified and isolated by the safety isolation procedure.

SUBPART F - SAFETY PRECAUTIONS

Accidental Energization:


- Installation of properly sized ground cables (jumpers) on all buss/cables affected by the procedure, the grounding cables/lugs shall be of sufficient size and design to accommodate fault currents. This will short circuit any power that may be inadvertently applied to the equipment.
- Safety blankets should be used to cover exposed areas in the near proximity of the work area to prevent accidental contact by any employee who is authorized to work on the equipment.
- If it is unsure if there is a Time Delay Relay (TDR) Transfer switch and/or a by-pass switch then jumpers must be installed using a hot stick and all appropriate safety equipment.

General Requirements:

- No harnesses will be allowed in the Motor Control Center (MCC) when working inside or around potential energized equipment (Switch gear, etc.)
- No jewelry, rings, ear rings, exposed body piercings, necklaces, etc. will be allowed when working in the MCC are where they pose an inherent safety hazard.

Safety Equipment:

- Emergency response team will be notified of the type of work that will be performed, location, and what emergency procedures may be required.
- Radio channel of guard and emergency response team needs to be noted.

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- Telephone numbers of the guard and emergency response team needs to be noted as well.
- Emergency equipment will be present that may be needed in an emergency (i.e., fire extinguisher, fire blanket, CPR mask/valve, latex gloves, etc.)
- Escape routes shall be identified and be free from obstruction. Two escape routes shall be noted; a primary and a secondary.

SUBPART G - SPECIAL PRECAUTIONS


Electrical circuits used as temporary feeders shall be identified properly:

- Tagged with "DANGER Temporary Power" signs.
- Exterior portion of wire wrapped with danger barricade tape to identify these circuits as being active (from source to termination cabinet - minimum).
- Temporary feeders shall be identified at the source (i.e., generator, transformer, etc.) with signs stating the voltage and the termination point (i.e., 480V power bus or circuit breaker number).
- At the termination point, the temporary feeder shall be identified by voltage and signs placed directly in front of, behind, and any other pertinent areas adjacent to the termination point that could be exposed for access.

Temporary power connected to the load side of a circuit breaker must have the following:

- A sign on the access door of the circuit breaker identifying "**DANGER - Temporary power hooked-up on Load side of Breaker**".
- The termination points shall be labeled to identify the temporary power connection.
- The wire coming from the power source to the load side of the breaker must be identified by red barricade tape.
- A sign stating voltage of wire. Depending on the site requirements, one qualified person may be appointed to oversee the lock-out procedure. This

person would oversee all power connections and the lock-out / tag-outs. Also, and matrix should be prepared to identify all termination points, and all lock-out points to ensure that all safety precautions are taken, prior to commencing work.

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SUBPART H - TEMPORARILY REMOVING LOCK-OUT DEVICES FOR TESTING

At times lock-out devices must be removed to facilitate testing of equipment. To ensure employees safety it must be done in the following sequence:

- Supervisor shall ensure all tools and equipment are cleared away, then,
- Remove all affected and non affected employees
- Authorized employee remove LO/TO device(s), then
- Energize equipment and proceed with testing
- De-energize & re-apply control measures.

Removing the LO/TO devices for testing must be documented, and approved by the Project Site Manager / Safety Coordinator.


SUBPART I - LOCKOUT / TAGOUT METHODS

Individual Method: Employees will place their individual locks and tags at each lockout point before beginning to perform any work.

Lock Box: The supervisor or his designee will lockout each point of isolation for the equipment to be worked on and will note the location and assign a number of such lockout points on a group lockout form. (See Lockout/Tagout Location Form) The keys will be placed in a lock-out box and locked with a supervisor’s key and all affected employees will affix a lock and tag identifying their respective lock (s).

Group Lockout: The supervisor or his designee will lockout each point of isolation for the equipment to be worked on and will note the location and assign a number of such lockout points on a group lockout form. (See Lockout /Tagout Group Form) Each employee to work on the system will sign in and out on the Group Lock-Out form.

In the event of shift-change or tour work-over where the individual worker who starts a job often is not the one who completes it, each worker shall remove his lock and tag at the end of the shift and/or sign out on the Group Sign In/Out form. Each new shift worker shall apply his/her own lock and tag and/or sign in on the

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Group Sign In/Out form. In order to provide constant protection, the current shift supervisor shall only remove his lock and tag when the new shift supervisor is present. The new shift supervisor shall immediately apply his own lock and tag.

In the case where the same worker will perform the same work over an extended period of time with no other workers replacing them, the following should take place:


- At the end of the shift the employees shall remove the locks and tags and/or sign in on the Group Sign In/Out form.
- The next shift the employees must install their locks and tags and/or sign in, in accordance with the above.
- The supervisor's lock and tag should remain on the isolation devices at all times, until the equipment is repaired, replaced, etc. and all employees are finished working on the equipment. (Note: The supervisor must make provisions with the owner/client for emergencies.)

Before the supervisor or his designated employee can remove his/her lock they must first ensure that all craftsmen are finished working on the equipment and is away from the equipment. He/she may then remove their lock and re-energize the equipment.

AT NO TIME WILL AN INDIVIDUAL REMOVE ANOTHER'S LOCK AND TAG UNLESS EVERY EFFORT HAS BEEN MADE TO CONTACT THE OWNER OF THE LOCK AND ALL PARTIES; THE PROJECT SUPERINTENDENT, THE SUPERVISOR, AND THE SAFETY COORDINATOR, AGREES TO THE SAFE REMOVAL OF THE LOCK.

Note: This process must be documented by the person who initiates the lock removal procedure. After the locking device has been removed, the employee must be notified upon his/her return to the jobsite or project that the locking device has been removed, by whom, and the reasoning why.

SUBPART J - ENFORCEMENT OF THE PROGRAM

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The Operations Manager who is the supervisor over the Foreman and/or the Superintendent controlling the Energy Isolation shall enforce the proper protocol that is defined in the work permit and/or the JSEA defining the task.

SUBPART K - LOCKOUT / TAGOUT DEVICE INSPECTION

A documented inspection of the Lockout and Tagout equipment shall be performed by the Supervisor / foreman to insure that the equipment is in good order and ready for use. Defective devices will be repaired or replaced.

The inspections will occur at least annually and be documented to ensure procedures and requirements are being followed


SUBPART L - CONTRACTORS

Contractors are defined as: third-party companies working on Berry Bros.' property or for Berry Bros. on a contract for a client. They shall be subject to use this Lockout Tagout procedure while servicing or maintaining equipment, machinery and/or processes.

SUBPART M - TRAINING

All affected employees will be trained in the following aspects of our Lock-out/Tag-out procedures:

- Recognition of applicable energy sources, magnitude of energy, and methods of energy isolation and control.
- Each affected employee will be trained in the purpose and use of the energy isolation/control procedures and devices
- All affected employees will be trained in the limitations of tags.
 - Tags are warning devices (not physical restraints).
 - No Tag is to be removed without authorization.
 - Tags are not to be ignored or defeated in any way.
- Training will also be included for employees not directly involved in the Lock-out/Tag-out procedure but whose work is in the vicinity where energy control procedures may be utilized.

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Retraining:

- Will be provided for all employees affected by this procedure when there is a change in their job assignments, in machines, equipment, or processes that present a new hazard, or whenever there is a change in the Lock-out/Tag-out procedures.
- Re-training will also be conducted whenever periodic inspections reveal deficiencies in the knowledge and inadequacies of the employee(s) following this procedure. The goal is the re-establish proficiency as necessary.

All Training and retraining records must be documented, signed, certified and will be kept at the main office. The Training Data Sheet will be forwarded to the Corporate HS&E Department for entry into our corporate Training Database.

Periodic Process audits and observations will be conducted by persons outside the lock-out / Tag-out process. (i.e., Corporate HS&E Director, Corporate Sponsor, Project Manager, client, third party, etc.)

SUBPART N - RECORD RETENTION

All Lock-out / Tag-out Lock Locations, Group Lock-out Forms, Checklist, Audits, Training etc. shall be kept on site, then retained in job files for the appropriate length of time established by BBGCI Management.

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