**LOCKOUT-TAGOUT**

**Lockout/Tagout Procedures (LOTO)**

Each person who could be exposed directly or indirectly to a source of electrical energy or other source shall be involved in the Lockout/Tagout process. All persons who could be exposed shall have documented training to understand and demonstrate the established procedure used to control the energy and their responsibility in executing the procedure. This program will be inspected annually to make sure it is compliant and meeting our objectives.

***Simple Lockout/Tagout***

All Lockout/Tagout procedures that involve only a qualified person de-energizing one set of conductors, or circuit part source, for the sole purpose of safeguarding employees from exposure to electrical hazards shall be considered to be a Simple Lockout/Tagout. Simple Lockout/Tagout plans shall not be required to be written for each application. Each worker shall be responsible for his or her own lock and tag. Simple Lockout/Tagout plans cannot last for more than one work period (NFPA 70E).

***Complex Lock Out/Tag Out***

1. A complex Lock Out/Tag Out plan shall be permitted where one or more of the following exist:
	1. Multiple energy sources
	2. Multiple crews
	3. Multiple crafts
	4. Multiple locations
	5. Multiple employers
	6. Multiple disconnecting means
	7. Particular Sequences
	8. Job or task that continues for more than one work period
2. All Complex Lockout/Tagout procedures shall require a written plan of execution that identifies the person in charge. (Use the Complex LOTO in the Appendix)
3. The Complex Lockout/Tagout procedure shall vest primary responsibility in an authorized and qualified employee for a set number of employees working under the protection of a group lockout or tagout device(s), such as an operation lock. The qualified person shall be held accountable for the safe execution of the Lockout/Tagout.
4. Each authorized employee shall affix a personal lockout or tagout device to the group lockout device(s), group lockbox, or comparable mechanism(s) when he or she begins work and shall remove those devices when he or she stops working on the machine or equipment being serviced or maintained.

**De-energizing – Details**

1. A determination of the type of Lockout/Tagout system to be used shall be made by the qualified person of the plan. All employees affected shall be notified and acknowledged in writing the type of plan, who the qualified person in charge of the plan is and what procedures will be followed in implementing the plan.
2. If the electrical system is in an existing facility and is energized, safe procedures and approval for de-energizing circuits and equipment shall be determined by the qualified and authorized person in charge of the Lockout/Tagout Plan before a circuit or piece of equipment is de-energized.
3. The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, relays, dimmers, selector switches and interlocks, may not be used as the sole means for de-energizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for Lockout/Tagout procedures.
4. Stored electric energy, which might endanger personnel, shall be released. Capacitors shall be discharged, and high capacitance elements shall be short-circuited and grounded. These tasks are to be performed by qualified, competent and authorized persons.

**Note: If the capacitors or associated equipment are handled in meeting this requirement, they shall be treated as energized.**

1. Stored non-electrical energy in devices that could reenergize electric circuit parts shall be blocked or relieved to the extent that the circuit parts could not be accidentally re-energized by the device.
2. A lock and a tag shall be placed on each disconnecting means used to de-energize circuits and equipment on which work is to be performed.
3. A qualified person shall operate the equipment controls or otherwise verify that the equipment cannot be restarted.
4. A qualified and authorized person shall use reliable test equipment to verify the circuit elements and electrical parts of equipment to which employees will be exposed and shall verify that the circuit elements and equipment parts are de-energized. The verification shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage back feed even though specific parts of the circuit have been de-energized and locked out.

**General Rules for Locks and Tags**

1. Each tag shall contain a statement prohibiting unauthorized operation of the disconnecting means or removal of the tag.
2. If an individual lock cannot be applied, other procedures must be employed that will provide a level of safety equivalent to that obtained by the use of an individual lock. A tag may not be used without an individual lock unless other procedures are followed that provide equivalent level of safety to that of an individual lock.
3. A lock may never be used without a tag.

**Re-energizing**

1. Qualified and authorized person(s) shall conduct verification and visual inspections, as necessary, to confirm that all tools, electrical jumpers, shorts, grounds and other such devices have been removed, that all new components have been installed properly or that any new conductors have been terminated, tested, torqued and tagged so that the circuits and equipment can be safely energized. This requires a visual inspection of all new and existing circuit components.
2. Employees exposed to the hazards associated with re-energizing the circuit or equipment shall be warned to stay clear of circuits and equipment.
3. Each lock and tag shall be removed by the authorized person who applied it, under his/her direct supervision or by the qualified and authorized person in overall charge of the Lock out/Tagout. If that qualified and authorized person is absent from the workplace, then the lock or tag may be removed by another qualified and authorized person designated to perform this task provided that:
	* 1. The supervisor ensures the qualified person who applied the lock or tag is not available at the workplace.
		2. The supervisor ensures the original installing person is aware that the lock or tag has been removed before he/she resumes work at that workplace.