

CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGS-PLUS) FOR THE MARITIME INDUSTRY

HOW TO COMPLY WITH NEW SHIPYARD SAFETY REGULATIONS



Shipyards work presents unique safety and coordination challenges for employees who service shipyard machinery, equipment and systems. To address these issues, OSHA published “General Working Conditions in Shipyard Employment” (29 CFR § 1915) in May 2011 to revise its standards on general working conditions in shipyard employment. This ruling became effective and enforceable August 1, 2011, followed by § 1915.89 (the control of hazardous energy), which became effective and enforceable October 31, 2011. Before this updated regulation, existing requirements had not been updated since their inception in 1972.

The CFR § 1915 standards apply to general working conditions in shipyard employment, which includes ship repairing, shipbuilding, shipbreaking and related employments at landside operations and on vessels and vessel sections, regardless of geographic location. Shipyard employment also occurs on vessels and vessel sections within the navigable waters of the United States (unless the application is preempted by regulations of another federal agency).

What’s included in Control of Hazardous Energy (Lockout/Tags-Plus) Section 1915.89?

OSHA developed a single lockout/tags-plus rule for all servicing operations, both landside and on vessels and vessel sections, to ensure that employers have a cohesive strategy to protect employees from hazardous energy. Section 1915.89 applies to servicing performed by any employee, including ships’ officers and crew.

Previously, the maritime industry was exempt from 29 CFR 1910.147, the general industry standard for controlling hazardous energy. This new regulation establishes requirements to control hazardous energy during servicing of machinery, equipment and systems in shipyard employment when an employee could be injured if the equipment or system is energized, is started up, or releases hazardous energy. The new rule includes general industry lockout/tagout provisions, but adds specific provisions to protect shipyard workers, who typically service large, complex systems with multiple power sources.

Establishing a Lockout/tags-plus Program and Coordination Process

To comply with these regulations, shipyard employers need to develop and document a written lockout/tags-plus program, including:

- 1) General procedures for using lockout or tags-plus systems
- 2) Procedures for protecting employees involved in servicing operations
- 3) Specifications for locks or tagout hardware
- 4) Employee training procedures
- 5) Incident investigation procedures
- 6) Program audit procedures

You must use a tags-plus system for energy-isolating devices that cannot be locked out. If an energy-isolating device can be locked, a lock must be used unless an employer can demonstrate that the use of a tags-plus system will provide “full employee protection” equivalent to lock-provided protection.

A tags-plus system involves attaching a tag to an energy-isolating device where a lock would have been attached. The “plus” component requires that at least one additional safety measure is also utilized, such as:

- Removing an isolating circuit element, such as a fuse
- Blocking a control switch, including blocking a circuit breaker with clips
- Opening an extra disconnecting switch
- Using a blocking device such as a tie wire on a valve handle
- Blocking, blanking or bleeding a line, including bolting a blank flange on a line
- Removing a valve handle or wiring it in place
- Shutting a second valve (double-valve isolation)
- Physical attendant (This is not the preferred method and should only be used if you cannot identify an additional feasible safety measure.)



Procedures include all information employees must know to control hazardous energy during servicing.

Lockout/tags-plus Coordination

With the complexity of machinery, equipment and systems in vessels, coordination among employees is crucial to their safety. Coordination of lockout/tags-plus applications is required when multiple employees are servicing machinery, equipment or systems, or when servicing occurs at the same time on a vessel or vessel section. Coordination is not required when servicing multiple machinery, equipment or systems at the same time only at landside facilities.

Shipyards employers are required to appoint a lockout/tags-plus coordinator – an employee designated to coordinate all lockout and tags-plus applications. The coordinator's goal is to constantly monitor the status of each servicing operation. This will help avoid situations when an employee servicing one part of a system is injured because an employee working on another part of the system restores power without awareness of the other worker.

In addition to designating a lockout/tags-plus coordinator, you must maintain a lockout/tags-plus log. The log must be specific to each vessel, vessel section or landside work area, and must include ongoing records of:

- 1) Location and type of machinery, equipment or system
- 2) Name of authorized employee applying the lockout/tag-plus system
- 3) Date the lockout/tags-plus system was applied
- 4) Name of authorized employee removing the lock or tags-plus system
- 5) Date the lockout/tags-plus system was removed

Written Lockout/tags-plus Procedures

Employers must establish and implement written energy-control procedures, including all information employees must know to control hazardous energy during servicing. You may not need to write different procedures for every piece of equipment – a single procedure can apply to similar machines with the same or similar types of controls.

If the machine, equipment or system has a single energy source that can be readily identified and isolated, no written procedure is needed.

Procedures for Lockout/Tags-plus

Written energy control procedures must include these steps:

- Shutdown and isolation of equipment
- Application of lockout/tags-plus systems
- Verification of de-energization and isolation
- Testing
- Removing lockout/tags-plus systems
- Startup

Procedures for Group Lockout/Tags-Plus

Group lockout/tags-plus occurs when more than one employee is working on the same machinery, equipment or system simultaneously. You must assign responsibility to one primary authorized employee for each authorized group working on the same machinery. Each primary authorized employee will ensure that group members have applied their own locks, have signed a group tag, or have otherwise complied with the employer's procedures for group servicing operations. When multiple groups or individuals are servicing the same machinery at the same time – a common occurrence in shipyards – a lockout/tags-plus coordinator will be more effective in managing all lockout/tags-plus systems.

Procedures for Multi-Employer Worksites

When you need to coordinate responsibilities for a lockout/tags-plus program among host and contract employers, the host employer must establish and implement procedures to protect employees from hazardous energy in multi-employer worksites. These procedures must specify responsibilities for both the host employer and the contract employer(s). The host employer must also ensure that the lockout/tags-plus coordinator is aware of all servicing operations and communicates with each contract employer.

Procedures for Shift or Personnel Changes

Your lockout/tags-plus program must include specific procedures to ensure the continuity of lockout or tagout protection during work shift and personnel changes.



Having a written, visual lockout procedure at the point of need helps maintenance personnel quickly and accurately identify all control points.

Specifications for Locks and Tags-plus Hardware

Shipyards employers are required to provide materials and hardware to uniquely identify each lock and tag for lockout/tags-plus applications. Use the same color lock, or tag, for all applications, and select products with these qualities:

Durable: Locks and tags must be able to withstand their environmental conditions. Tags must be constructed and printed so they do not deteriorate or become illegible in wet or damp environments, or where corrosives are used or stored.

Standardized: Color, shape or size should make locks and tags readily recognized and associated with lockout. They must also have standardized print and format.

Substantial: Locks must be sturdy enough to prevent removal without use of excessive force or special tools (bolt cutters, metal cutting tools). Tag attachment must be sturdy enough to prevent inadvertent or accidental removal, withstand all environmental conditions, be non-reusable, attachable by hand, self-locking and non-releasable, with minimum unlocking strength of 50 pounds.

Identifiable: Each lock and tag must clearly identify the authorized employee who applied it. Tags must warn of hazardous conditions that could arise if the machine or equipment is energized.



Using plastic-bodied padlocks, such as the Brady Safety Padlock, helps your employees differentiate between padlocks used for lockout/tags-plus purposes and general security purposes.

Employee Training

Employers must provide lockout/tags-plus initial training for all employees. Specifically, these groups of employees must receive lockout/tags-plus training:

- 1) Employees whose work operations are or may be in an area where a lockout/tags-plus system is in effect
- 2) Affected employees
- 3) Authorized employees
- 4) Lockout/tags-plus coordinators

Lockout/tags-plus coordinators and authorized employees need the most extensive training because of their responsibilities.

For the general industry regulation, OSHA notes that retraining for employees must occur annually. For § 1915.89, you should assess your workplace and workforce to determine the appropriate retraining frequency you need to maintain employee proficiency. Retraining must also occur with new job assignments, changes in the overall lockout/tags-plus program or procedures, or when an incident investigation or audit indicated deviations from or deficiencies in the lockout/tags-plus program or procedures.

You also need to keep a record of current and completed training, including employee's name, training date(s) and the training topic.

Incident Investigation

OSHA notes that successfully identifying and addressing root causes of incidents is the most effective way to prevent fatalities and injuries. Employers must investigate each incident that resulted in, or could reasonably have resulted in energization, startup or the release of hazardous energy. Within 24 hours of the incident, an employer must initiate an investigation and notify each employee who was, or could reasonably have been, affected by the incident. The employer must prepare a written report of the investigation, including:

- 1) Date, time and location of the incident
- 2) Date and time the incident investigation began
- 3) Description of the incident
- 4) Contributing factors to the incident
- 5) Copy of any lockout/tags-plus log that was current at the time of the incident
- 6) Any corrective actions that the employer must take as a result of the incident

The employer must also review the written incident report with each employee having job tasks related to the investigation's findings. Within 30 days of the incident, the investigation and report must be completed and necessary corrective actions taken. If 30 days is insufficient, OSHA requires the employer to prepare a written abatement plan that explains the circumstances of the delay, a proposed timeline for corrective actions to be implemented, and a summary of interim steps that the employer will take to protect employees.

Program Audits

Audits are also part of the updated regulations. Written lockout/tags-plus programs, procedures, logs, and incident reports that have been completed since your last audit must be audited annually. Annual audits are meant to ensure that energy-control procedures are working properly, and must determine:

- 1) Whether steps in the energy-control procedures are being followed
- 2) Whether the employees involved know their responsibilities under the procedures
- 3) Whether the procedures are adequate to provide necessary protection
- 4) What changes, if any, are needed to correct identified deficiencies

Instead of auditing each energy-control program, you can instead inspect a sample of the equipment covered by the procedure, and consult with authorized employees who implement the procedure on that equipment. Audits must be performed by an authorized employee other than the employee using the procedures that are currently being reviewed, or by an outside consultant who understands your program and procedures.

Finally, you must complete an audit report including: the audit date, identity of individuals performing the audit, procedures and machinery audited, audit findings and recommendations. Information included in the report must be communicated to each employee having a job task that may be affected by the audit. Within 15 days after receipt of the audit report, shipyard employers must correct any deviations or inadequacies in their program.

Conclusion

While you may have already been following portions of other lockout-tagout rules, these new provisions are designed to address important steps in controlling hazardous energy – namely, having a well-written plan and procedures, designating a lockout/tags-plus coordinator, using durable, standardized locks and tags-plus hardware, and providing thorough training and follow-up. By complying with these updated regulations, you can streamline your shipyard operations and save costs while improving protections for the safety of your employees.

Exemption for U.S. Navy Vessels: Special provisions for this regulation apply to repairs to U.S. Navy vessels. The Navy ship's force will maintain control of the vessels' machinery, equipment, and systems and will perform the procedures for controlling hazardous energy. Navy vessels undergoing repair may have to become operational quickly for national security needs, so if contractors are performing servicing operations onboard U.S. Navy-owned and -operated vessels, the Navy ship's force will always maintain control of the hazardous energy.

To learn more about lockout/tagout, visit:
www.BradyID.com/lockouttagout

USA
Customer Service: 1-888-272-3946
Inside Sales: 1-888-311-0775
www.BradyID.com

Canada
Customer Service: 1-800-263-6179
www.BradyCanada.ca

Mexico
Customer Service: 1-800-262-7777
Inside Sales: 1-800-262-7777 ext 177
www.BradyLatinAmerica.com