



# Loss Control TIPS

## Technical Information Paper Series

*Innovative Safety and Health Solutions<sup>SM</sup>*

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## The Failing of Lockout/Tagout Compliance

On January 2, 1990, "The Control of Hazardous Energy" 1910.147 standard became part of the Occupational Safety and Health Act. Through a review of BLS statistics, it was forecast that implementation of the law would eliminate the loss of 122 lives and 28,000 lost workdays in American industry on an annual basis. This was to be accomplished, most directly, by employers creating tailored, mandatory procedures for maintenance or service of their equipment and training their operators to use these procedures. The program would be self regulated, by the employer, within the guidelines and directives of the standard.

Some OSHA offices have estimated that seventy to eighty percent of manufacturers (about 4 out of 5) in their regions have not fully complied with the fundamentals of 1910.147. Many times these manufacturers are nationally known names. This is remarkable as the standard has been out for several years. For many years, on an annual basis, lockout/tagout (LO/TO) citations have been among the ten most frequently cited by compliance officers. Why is this? We will look into this following some background information.

### Background

Four fundamental areas of compliance pertain to the 1910.147 standard:

- 1) Development of a *written program* for lockout/tagout. This document defines the company policy for such things as: when a LO/TO procedure is required [per .147 (a)(2)(ii)], use of specific locks, use of tags, group maintenance, shift change continuity, inspections, retraining, disciplinary action, shut down/start up sequence, notification, and other/visiting contractors. Most OSHA offices will supply a sample program which would be used as guidance, and rewritten to suit the company.
- 2) Development of *specific written energy control procedures* for each piece of equipment to be locked or tagged.
- 3) Presentation of traceable *training* for operators with regard to the lockout/tagout program. Training records are one of the first places that an OSHA compliance officer will examine. Program content, dates, and attendee signatures will help verify what has been done.
- 4) Performance of *annual audits* of lockout/tagout practices conducted by "authorized" personnel. Records of results must be maintained. A LO/TO log book will help track frequency of use.



## Affected Workers

Three groups of workers are identified in the 29 CFR 1910.147 standard:

### Authorized

These are employees who have an intimate knowledge of the system to be maintained and its functioning. They know the energy types and sources, where to disable them and the means to be used, as well as shut down and start up sequences. They would perform the required repairs or service and place locks or tags at the appropriate points. Only the equipment for which they have received training is in their scope of activity. Depending on the scope of their job, they may be authorized to work on specific systems and not necessarily on all facility systems. Training for this group is, of necessity, more detailed and takes the most time.

### Affected

These are the employees that usually operate the system to be locked or tagged. Usually they rely on the system to produce a product as part of their job. They may also be required to work in an area where maintenance or service is being performed. They need training in the purpose of the procedures and how and when “authorized” operators will use them. They must know what they are to do (or not do) during this time.

### Other

These employees are incidental to the system to be locked or tagged. They are typically assigned tasks (i.e., office, custodial, driving) that are not specific to the system function and are not routinely in the area working with the system. Many times they are passers by. They need to understand there are energy control procedures for maintenance and service and the prohibition for attempting to restart locked or tagged equipment. Training for this group takes the least time.

## Specific Procedures

Generally, because the standard is related to safe work practices, responsibility for fulfillment is assigned to the safety group. However, in most cases, these groups lack the specific expertise to develop system by system procedures. Typically, they would not perform maintenance or service on any facility system. It would be highly unlikely then that they would know the number of energy sources, their magnitude, where to de energize the equipment, nor would they place a lock for system maintenance. In essence, the safety group would not be “authorized” personnel (instead, they would be “affected” personnel). However, the group that did the system installation would know and do these things.

Before a new system is ever turned over to production, system operating procedures must be completed for the operator to use. A *subset* of these operating procedures should be the development of LO/TO protocol by the system installation group. During the system engineering and installation process, compliance (LO/TO and machine safeguarding for operator use) must be addressed as part of the equipment development process. For older, existing, systems, it makes sense that the installation group would still be the ones to develop the LO/TO procedures.

Often, written procedures are not consistent or thorough enough, or are missing altogether. They do not establish an orderly shut down or start up sequence. Steps are missed. In other instances, the procedure is too generic and does not specify the energy types or locations to be disabled. Breaker boxes and valves need to be identified or labeled to support the correct decision for de energizing. Similar machines that vary in their control or operation features must have procedures that are specific to their variation. Turning key controlled switches “off” on the control panel does not constitute compliance; the main breaker must be disengaged. The cords of plug connected equipment must remain in the servicer’s exclusive control and line of sight; otherwise it must be locked or tagged. And finally, procedures must account for the hazards that have been evaluated for mitigation (This assumes a brief, effective hazard evaluation for energy sources has occurred.).

## System Changes

Sometimes, people believe that a wholesale system reconfiguration must occur to support the LO/TO protocol. It is the avoidance of retrofit engineering that may hold off compliance. The standard does not mandate retrofit to support LO/TO unless the machine (after January 2, 1990) is replaced, has major repair, renovation, or a modification is performed (The standard does specify that *new* systems must accept a lockout device).

What is required, at minimum, is the development of an alternative method (i.e., the use of tags, taking off handles, etc.) to safeguard maintenance and service employees; it does not allow the option of doing nothing. Usually, there is always some way of disengaging electrical energy, relieving pressures, blanking, or providing blocks, because a similar method was necessary to accomplish the original installation. It may not always be convenient but neither is the ensuing incident when this is not done.

## Recognizing Limits

The intent of the standard is not to give safety professionals one more thing to do. The standard is meant to assure the placement of a management endorsed working program. It is to be supported and developed with technical expertise, widely distributed for use, with verification to attest that it is working.

In discussions with many OSHA compliance officers, they state that broad-based participation is necessary for adequate compliance with the intent of the standard. Some safety managers may be trying to do it all themselves. Moving past this thinking will share the overall task. Safety managers are certain to fail unless there is an expansion in the level of participation. Some may fear that they are showing their ignorance or lack of technical strength or that they may lose jurisdiction. The real ignorance is not doing anything meaningful in an area that will predictably result in lost work days, disability or a fatality due to inadequate attention.

This is not to say that the reason for compliance shortfalls is the fault of safety managers. They may be under-staffed and over-tasked. However, they are likely the ones who are most acutely aware of the degree of non-compliance that occurs in their facilities. The safety group should function as a management tool to assure uninterrupted production and preservation of production resources. They are the ones most professionally obliged to inform their management of compliance issues that can significantly impact production and loss, and what actions and resources are necessary to ensure improvements. Assigning of authority, funding, scheduling and manning to accomplish the job is a management responsibility.

## Coordination and Training

The function of the safety group with LO/TO compliance should be that of program coordination with some of the training responsibility. It is reasonable that this group oversee full compliance. It is not reasonable that they are left to do it with unavailable or unresponsive resources.

Training of “other” and “affected” groups as described by the standard is more of an awareness training and could be done by the safety group.

Training for “authorized” personnel is functional, system specific training. It needs to be accomplished by people who are knowledgeable of internal system functions, energy requirements, location of energy sources (i.e., electrical, air, springs, gravity) and the proper sequence for shut down and start up. Furthermore, the standard specifically states that only an “authorized” employee can perform the annual inspection of the energy control procedures (29 CFR 1910.147 (c)(6)(i)(A); this probably *excludes* the safety person or insurance representative). Discrepancies discovered during inspection would indicate a need for retraining or procedure updates.

## Summary

It is perceived that OSHA does not have enough resources to visit all production facilities in this country on a regular, scheduled basis. As a result, a manufacturer may put off full compliance to the point that partial compliance becomes the standard practice. Because of this, many may even believe that they have a compliant program because this is the course management has apparently endorsed. Unless a serious incident occurs or a written complaint is filed with OSHA, the situation could stay that way for years.

At issue are the limbs and lives of people who work with machinery. A loss of either certainly indicates failure of the program. However, little comfort can be taken when serious injuries have been avoided, *unless* they have been avoided because of an effective lockout/tagout program. If your program is weak or non-existent, sometime—perhaps today—one of your workers will go home less than whole—or perhaps not go home at all. It’s up to you.

## Reference

United States. Occupational Safety and Health Administration. *The Control of Hazardous Energy (lockout/tagout)*. (29 CFR 1910.147).

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