

Job Safety and Health
It's the law!

OSHA
Occupational Safety and Health Administration
U.S. Department of Labor

EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the OSH Act.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violation.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the OSH Act that apply to your own actions and conduct on the job.

EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the OSH Act.

This free poster available from OSHA –
The Best Resource for Safety and Health

Free assistance in identifying and correcting hazards or complying with standards is available to employers without citation or penalty through OSHA supported consultation programs in each state.

1-800-321-OSHA
www.osha.gov









Intro to OSHA Temporary Worker Initiative Lockout/Tagout Case Study

Directorate of Training and Education
OSHA Training Institute

Jack Wheatley – Business Dev. Manager
Certified OSHA Outreach Trainer



★Nectir's MISSION★

To provide innovative workforce and career solutions for our clients and consultants using a next-generation staffing model that increases responsiveness, quality and value.

Nectir specializes in staffing IT, finance, accounting, manufacturing, engineering, telecommunications, healthcare, manufacturing, and supply chain/ logistics.

Natural Disaster Project Manager/Area Manager

- Irene, Isaac, Isabella, Sandy, Wichita Tornadoes, etc...

Blue collar and skilled staffing to manufacturing, WH, construction, et.



Presentation Agenda

1. Current in the News – Maac Machinery Accident
2. Brief OSHA Intro.
3. Navigating OSHA's Temporary Worker Initiative - An Employer's Responsibility and Opportunity.
4. Top 5 safety citations/penalties for manu. from 10/2013-9/2014.
5. Review of lockout/tagout
6. Case Study – lockout/tagout - **Automotive Component Lubrication Robotics**

Accidents have no schedules, timetables, or geographic bounds.

They can happen to anyone, anywhere, anytime for a variety of reasons –(non)–predictable, (no) fault, (non) negligence.



A man was killed in an air tank explosion at a machinery manufacturing plant Monday night (2/3/2015) in northwest suburban Carol Stream.

Chad Nelson, 35, was welding metal machinery about 9:30 p.m. at Maac Machinery, 590 Tower Blvd. in Carol Stream, when there was a "catastrophic failure," according to the DuPage County coroner's office.

An estimated 200-gallon air tank exploded while being tested for leaks, according to a statement from the Carol Stream Fire Protection District. There was no fire or smoke in the explosion.

Nelson, of Elgin, suffered severe traumatic injuries and was dead at the scene, according to the coroner's office.

Another person who was in the vicinity during the explosion denied medical treatment, according to the fire protection district.

There were no structural hazards to the building from the explosion, according to the statement.

The Occupational Safety and Health Administration has opened an investigation into the fatality, according to spokesman Scott Allen.

<http://chicago.suntimes.com/crime/7/71/340206/one-person-killed-carol-stream-machinery-plant>

Job Safety and Health
It's the law!

OSHA
Occupational Safety and Health Administration
U.S. Department of Labor

EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the OSH Act.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violations.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the OSH Act that apply to your own actions and conduct on the job.

EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the OSH Act.

This free poster available from OSHA –
The Best Resource for Safety and Health

Free assistance in identifying and correcting hazards or complying with standards is available to employers without citation or penalty through OSHA supported consultation programs in each state.

1-800-321-OSHA
www.osha.gov









Intro to OSHA Temporary Worker Initiative

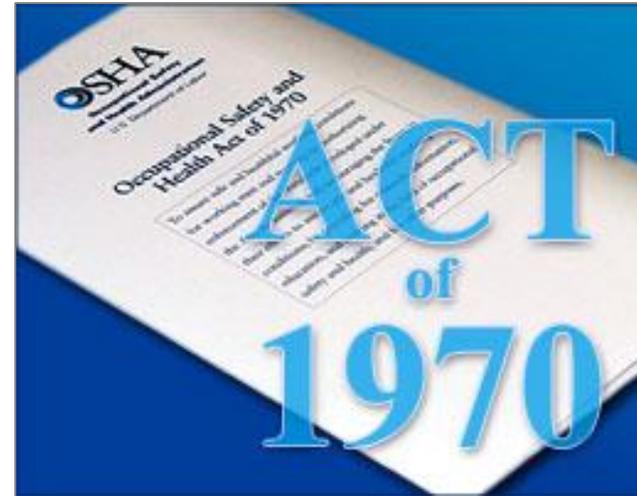
Directorate of Training and Education
OSHA Training Institute

Why is OSHA Important?

- ▶ OSHA began because, until 1970, there were no national laws for safety and health hazards.
- ▶ On average, 15 workers die every day from job injuries
- ▶ Over 5,600 Americans die from workplace injuries annually
- ▶ **(4,405 workers died on the job in 2013=12 per day(↓ 21%).**
- ▶ Over 4 million non-fatal workplace injuries and illnesses are reported

History of OSHA

- ▶ OSHA stands for the Occupational Safety and Health Administration, an agency of the U.S. Department of Labor
- ▶ OSHA's responsibility is worker safety and health protection
- ▶ On December 29, 1970, President Nixon signed the OSH Act
- ▶ This Act created OSHA, the agency, which formally came into being on April 28, 1971



OSHA's Mission

- ▶ The mission of OSHA is to save lives, prevent injuries and protect the health of America's workers.
- ▶ Some of the things OSHA does to carry out its mission are:
 - developing job safety and health standards and enforcing them through worksite inspections,
 - maintaining a reporting and recordkeeping system to keep track of job-related injuries and illnesses, and
 - providing training programs to increase knowledge about occupational safety and health.

Temporary Worker Initiative (TWI)

OSHA News Release: 13-800-NAT April 29, 2013

OSHA launches initiative to protect temporary workers

WASHINGTON — The U.S. Department of Labor's Occupational Safety and Health Administration today announced an initiative to further protect temporary employees from workplace hazards.

OSHA today sent a memorandum to the agency's regional administrators directing field inspectors to assess whether employers who use temporary workers are complying with their responsibilities under the Occupational Safety and Health Act.

- Inspectors will use a **newly created code in their information system to denote when temporary workers are exposed to safety and health violations.**
- Additionally, they will assess whether temporary workers **received required training** in a language and vocabulary they could understand.

Temporary Worker Initiative (TWI)

July 15, 2014	
MEMORANDUM FOR:	REGIONAL ADMINISTRATORS
THROUGH:	DOROTHY DOUGHERTY Deputy Assistant Secretary
FROM:	THOMAS GALASSI, DIRECTOR DIRECTORATE OF ENFORCEMENT PROGRAMS
SUBJECT:	Policy Background on the Temporary Worker Initiative

In recent months, OSHA has received and investigated many reports of temporary workers suffering serious or fatal injuries, some in their first days on the job. Numerous studies have shown that new workers are at greatly increased risk for work-related injury, and most temporary workers will be "new" workers multiple times a year. Furthermore, as the American economy and workforce are changing, the use of temporary workers is increasing in many sectors of the economy.

OSHA compliance officers regularly encounter worksites with temporary workers. This memorandum is being sent to remind OSHA field staff of the Agency's long standing general enforcement policy regarding temporary workers. Additional enforcement and compliance guidance will be issued in the near future.

Temporary Worker Initiative (TWI) - Definitions

Temporary Workers: Workers hired and paid by a staffing agency and supplied to a host employer to perform work on a temporary basis. This basis can be long or short term contract, project, day-to-day, or a temporary-to-permanent conditional work arrangement.

Staffing Agency: An employer that qualified workers for clients, in return for a fee from the prospective employer. They may provide employers with permanent, temporary or contract workers An employer staffing agency often controls a worker's paycheck and selects the host employer location where the worker will be sent.

Host Employer: An employer who is the client of a staffing agency. The host employer assigns the particular work to be done each day by the employee and controls operations in the physical workplace

Joint Employment: is a legal concept where the key attributes of the traditional employer-employee relationship are shared by two or more employers in such a manner that they each bear responsibility for compliance with statutory and regulatory requirements.

TWI Bulletin No. 1

PURPOSE: This bulletin addresses how to identify who is responsible for recording work-related injuries and illnesses of temporary workers on the OSHA 300 log.

1. Injuries and illnesses should be recorded on only one employer's injury and illness log. 29 CFR 1904.31(b)(4).
2. In most cases, the **host employer** is the one responsible for recording the injuries and illnesses of temporary workers as responsibility for reporting is determined by supervision.
 1. Employers must record the injuries and illnesses of temporary workers if they supervise such workers on a day-to-day basis. 29 CFR 1904.31(a).
 2. "in addition to specifying the output, product or result to be accomplished by the person's work, the employer supervises the details, means, methods and processes by which the work is to be accomplished"

TWI Bulletin No. 1

KEY QUESTION: If the staffing company has a “representative” at the host employer’s place of business is the responsibility to record injuries and illnesses on the OSHA 300 log transferred to the staffing agency?

OSHA DETERMINATION: As long as the host employer maintains day-to-day supervision over the worker, the host employer is responsible for recording injuries and illnesses.

The non-supervising employer (generally the staffing agency) still shares responsibility for its workers’ safety and health. The staffing agency, therefore, should maintain frequent communication with its workers and the host employer to ensure that any injuries and illnesses are properly reported and recorded. Such communication also alerts the staffing agency to existing workplace hazards and to any protective measures that need to be provided to its workers.

Conclusion/Direction for Joint Employers on TWI Bulletin No. 1

As a best practice, the staffing agency and host employer should establish notification procedures to ensure that when a worker informs one employer of an injury or illness, the other employer is apprised as well. The details of how this communication is to take place should be clearly established in contract language.

Employees, former employees, their personal representatives, and their authorized employee representatives have the right to access the injury and illness records. 29 CFR 1904.35.

OSHA 3735 - Recommended Best Practices for Joint Employers

Directive: Whether temporary or permanent, all workers always have a right to a safe and healthy workplace. The staffing agency and the host employer must work together to ensure that the Occupational Safety and Health Act of 1970 (the OSH Act) requirements are fully met. See 29 U.S.C. § 651.

The extent of the obligations of each employer will vary depending on workplace conditions and should therefore be described in the agreement or contract between the employers.

Either the staffing agency or the host employer may be better suited to ensure compliance with a particular requirement, and may assume primary responsibility for it. The joint employment structure requires effective communication and a common understanding of the division of responsibilities for safety and health.

OSHA 3735 - Recommended Best Practices for Joint Employers

Joint Evaluation of Host Employer's Worksite:

- Evaluate task assignments and job hazard analyses
- Identify and eliminate potential safety and health hazards
- Identify necessary training and protections for each worker.

The staffing agency should provide a document to the host employer that specifies each temporary worker's specific training and competencies related to the tasks to be performed.

OSHA 3735 - Recommended Best Practices for Joint Employers

Train Agency Staff to Recognize Safety and Health Hazards

Agency representatives should be trained in basic safety principles and the hazards commonly faced by its temporary workers, the agency will be better equipped to discover hazards and work with the host employer to eliminate or lessen identified workplace hazards before an injury or illness occurs.

OSHA 3735 - Recommended Best Practices for Joint Employers

Ensure the Employer Meets or Exceeds the Other Employer's Standards.

- Exchange and review each other's injury and illness prevention program.
- Host employers should also request and review the safety training and any certification records of the temporary workers who will be assigned to the job.

OSHA 3735 - Recommended Best Practices for Joint Employers

Assign Occupational Safety and Health Responsibilities and Define the Scope of Work in the Contract.

- The extent of the responsibilities the staffing agency and the host employer have will vary depending on the workplace conditions and should be described in their agreement.
- Defining, clarifying, and communicating the employers' and worker's responsibilities protects the workers of both the staffing agency and of the host employer.

OSHA 3735 - Recommended Best Practices for Joint Employers

Injury and Illness Tracking.

- Parties should discuss a procedure to share injury and illness information between the employers, ideally specifying that procedure contractually.
- Information about injuries should flow between the host employer and staffing agency.
- Both the host employer and staffing agency should track and where possible, investigate the cause of workplace injuries.
- 300 log stats are kept by the employer who is providing day-to-day supervision. Employers cannot discharge or contract away responsibilities that pertain to them under law.

OSHA 3735 - Recommended Best Practices for Joint Employers

Conduct Safety and Health Training and New Project Orientation

- OSHA standards require site- and task-specific safety and health training. The training must be in a language the workers understand.
- The training of temporary workers is a shared responsibility.
 - General Safety training is provided by the staffing agency
 - Site Specific training is provided by the host employer.
 - Host employers should provide temporary workers with safety training that is identical or equivalent to that provided to the host employers' own employees performing the same or similar work and notify the staffing agency of such specific training.

OSHA 3735 - Recommended Best Practices for Joint Employers

Injury and Illness Prevention Program

Staffing agencies and host employers each have a safety and health program to reduce the number and severity of workplace injuries and illnesses and ensure that their temporary workers understand it and participate in it.

OSHA 3735 - Recommended Best Practices for Joint Employers

Maintain Contact with Workers

- The staffing agency should establish methods to maintain contact with temporary workers.
- The staffing agency has the duty to inquire and, to the extent feasible, verify that the host has fulfilled its responsibilities for a safe workplace.
- The staffing agency should have a written procedure for workers to report any hazards and instances when a worker's tasks are altered by the host employer from those previously agreed upon.

Job Safety and Health
It's the law!

OSHA
Occupational Safety and Health Administration
U.S. Department of Labor

EMPLOYEES:

- You have the right to notify your employer or OSHA about workplace hazards. You may ask OSHA to keep your name confidential.
- You have the right to request an OSHA inspection if you believe that there are unsafe and unhealthful conditions in your workplace. You or your representative may participate in that inspection.
- You can file a complaint with OSHA within 30 days of retaliation or discrimination by your employer for making safety and health complaints or for exercising your rights under the OSH Act.
- You have the right to see OSHA citations issued to your employer. Your employer must post the citations at or near the place of the alleged violation.
- Your employer must correct workplace hazards by the date indicated on the citation and must certify that these hazards have been reduced or eliminated.
- You have the right to copies of your medical records and records of your exposure to toxic and harmful substances or conditions.
- Your employer must post this notice in your workplace.
- You must comply with all occupational safety and health standards issued under the OSH Act that apply to your own actions and conduct on the job.

EMPLOYERS:

- You must furnish your employees a place of employment free from recognized hazards.
- You must comply with the occupational safety and health standards issued under the OSH Act.

This free poster available from OSHA –
The Best Resource for Safety and Health

Free assistance in identifying and correcting hazards or complying with standards is available to employers without citation or penalty through OSHA supported consultation programs in each state.

1-800-321-OSHA
www.osha.gov









Presentation 2

Top 5 Cited Violations

Lockout/Tagout

Case Study

Directorate of Training and Education
OSHA Training Institute

Top 5- Cited OSHA Standards

Listed below are the standards which were cited by Federal OSHA for NAICS Code: 31 Manufacturing during the period October 2013 through September 2014. Penalties shown reflect current rather than initial amounts

Standard	Citations	Inspections	Penalty	Description
Total	2,492	676	\$5,704,538	<i>All Standards cited for Manufacturing (part 1 of 3)</i>
19100147	292	155	\$850,201	The control of hazardous energy (lockout/tagout).
19101200	193	123	\$158,945	Hazard Communication.
19100212	191	167	\$711,525	General requirements for all machines.
19100305	169	123	\$260,422	Wiring methods, components, and equipment for general use.
19100178	139	103	\$197,761	Powered industrial trucks.

Top 5- Cited OSHA Standards

Listed below are the standards which were cited by Federal OSHA for NAICS Code: 32 Manufacturing during the period October 2013 through September 2014. Penalties shown reflect current rather than initial amounts

Standard	Citations	Inspections	Penalty	Description
Total	7,546	1,791	\$12,603,080	All Standards cited for Manufacturing (part 2 of 3)
19100147	764	457	\$1,862,604	The control of hazardous energy (lockout/tagout).
19101200	732	425	\$410,342	Hazard Communication.
19100178	518	366	\$595,899	Powered industrial trucks.
19100134	510	261	\$362,244	Respiratory Protection.
19100212	473	421	\$1,494,884	General requirements for all machines.

Top 5- Cited OSHA Standards

Listed below are the standards which were cited by Federal OSHA for NAICS Code: 33 Manufacturing during the period October 2013 through September 2014. Penalties shown reflect current rather than initial amounts

Standard	Citations	Inspections	Penalty	Description
<u>Total</u>	13,708	3,086	\$21,527,492	<i>All Standards cited for Manufacturing (part 3 of 3)</i>
<u>19101200</u>	1,238	767	\$756,583	Hazard Communication.
<u>19100147</u>	1,183	697	\$3,333,116	The control of hazardous energy (lockout/tagout).
<u>19100212</u>	1,165	973	\$3,099,830	General requirements for all machines.
<u>19100134</u>	1,149	544	\$757,412	Respiratory Protection.
<u>19100178</u>	765	572	\$826,144	Powered industrial trucks.

Cited OSHA Standards in Summary

Listed below are the standards which were cited by Federal OSHA for Manufacturing during the period October 2013 through September 2014. Penalties shown reflect current rather than initial amounts.

Citations	Penalty	Description
292	\$850,207	31-LOTO
1,238	\$1,862,604	32-LOTO
1,183	\$3,333,116	33-LOTO
2,713	\$6,045,927	Total

Citations	Penalty	Des.	% Citations	% Penalty
2,492	\$5,704,538	All 31	11.7%	14.9%
7,546	\$12,603,080	All 32	16.4%	14.78%
13,708	\$21,527,492	All 33	8.6%	15.5%
23,746	\$39,835,110	Total	11.4%	15.2%

Of Over 132 citation descriptions in the Annual Report Cited of OSHA Standards:

- LOTO was #1 or #2 in Each NAICS Manufacturing Code
- LOTO's % total of Citation over 10% of the total and garnered 15% of total penalty \$s
- CONCLUSIONS???

OBEY LOCKOUT/TAGOUT



PROTECT your coworkers

- Part Number: 1910
- Part Title: Occupational Safety and Health Standards
- Subpart: J
- Subpart Title: General Environmental Controls
- Standard Number: [1910.147](#)
- Title: The control of hazardous energy (lockout/tagout).

1910.147(a)(1)(i)

This standard **covers the servicing and maintenance** of machines and equipment in which the **unexpected energization** or start up of the machines or equipment, or release of stored energy, could harm employees. This standard establishes **minimum performance requirements** for the control of such hazardous energy.

1910.147(a)(3)(i)

This section **requires employers to establish a program** and utilize procedures for affixing appropriate lockout devices or tagout devices to energy isolating devices, and to otherwise disable machines or equipment to prevent unexpected energization, start up or release of stored energy in order to prevent injury to employees.

1910.147(a)(2)EXCEPTIONS TO LOCKOUT/TAGOUT

1910.147(a)(2)(ii)

Normal production operations are not covered by this standard (See Subpart O of this Part). Servicing and/or maintenance which takes place during **normal production operations is covered** by this standard only if:

1910.147(a)(2)(ii)(A)

An employee is required to remove or bypass a guard or other safety device; or

1910.147(a)(2)(ii)(B)

An employee is required to place any part of his or her body into an area on a machine or piece of equipment where work is actually performed upon the material being processed (point of operation) or where an associated danger zone exists during a machine operating cycle.

Note: Exception to paragraph (a)(2)(ii): Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this standard if they are routine, repetitive, and integral to the use of the equipment for production, provided that the work is performed using alternative measures which provide effective protection (See Subpart O of this Part).

1910.147(a)(2)(iii)

This standard does not apply to the following:

1910.147(a)(2)(iii)(A)

Work on cord and plug connected electric equipment for which exposure to the hazards of unexpected energization or startup of the equipment is controlled by the unplugging of the equipment from the energy source and by the plug being under the **exclusive control of the employee performing the servicing or maintenance.**

The employer **SHALL ESTABLISH A PROGRAM** that contains energy control procedures, employee training, and periodic inspections that specifically outline the **scope, purpose, authorization, rules, and techniques** to control the energy. This program shall clearly and specifically outline the **MEANS TO ENFORCE COMPLIANCE!**

1910.147(c)(1)

Energy control program. The employer **shall establish a program** consisting of energy control procedures, employee training and periodic inspections to ensure that before any employee performs any servicing or maintenance on a machine or equipment where the unexpected energizing, startup or release of stored energy could occur and cause injury, the machine or equipment shall be isolated from the energy source and rendered inoperative.

1910.147(c)(4)(i)

Procedures shall be developed, documented and utilized for the control of potentially hazardous energy when employees are engaged in the activities covered by this section.

1910.147(c)(4)(ii)

The procedures shall clearly and specifically outline the **scope, purpose, authorization, rules, and techniques** to be utilized for the control of hazardous energy, and the **means to enforce** compliance including, but not limited to, the following:

1910.147(c)(4) Components of the LOCKOUT/TAGOUT Procedure

1910.147(c)(4)(ii)

The procedures shall clearly and specifically outline the **scope, purpose, authorization, rules, and techniques** to be utilized for the control of hazardous energy, and the means to enforce compliance including, but not limited to, the following:

1910.147(c)(4)(ii)(A)

A specific statement of the **intended use of the procedure**;

1910.147(c)(4)(ii)(B)

Specific procedural **steps for shutting down, isolating, blocking and securing machines** or equipment to control hazardous energy;

1910.147(c)(4)(ii)(C)

Specific procedural steps for the **placement, removal and transfer of lockout devices or tagout devices and the responsibility** for them; and

1910.147(c)(4)(ii)(D)

Specific requirements for testing a machine or equipment to determine and **verify the effectiveness** of lockout devices, tagout devices, and other energy control measures.

1910.147(c)(5)- Standards for the Lockout Device

1910.147(c)(5)(ii) - Lockout devices and tagout devices shall be **singularly identified; shall be the only devices(s) used for controlling energy; shall not be used for other purposes;** and shall meet the following requirements:

1910.147(c)(5)(ii)(A) - **Durable.**

1910.147(c)(5)(ii)(A)(1) - Lockout and tagout devices shall be capable of withstanding the environment to which they are exposed for the maximum period of time that exposure is expected.

1910.147(c)(5)(ii)(A)(2) - Tagout devices shall be constructed and printed so that exposure to weather conditions or wet and damp locations **will not cause the tag** to deteriorate or the message on the tag **to become illegible.**

1910.147(c)(5)(ii)(A)(3) - Tags shall not deteriorate when used in corrosive environments such as areas where acid and alkali chemicals are handled and stored.

1910.147(c)(5)(ii)(B) - **Standardized.** Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: Color; shape; or size; and additionally, in the case of tagout devices, print and format shall be standardized.

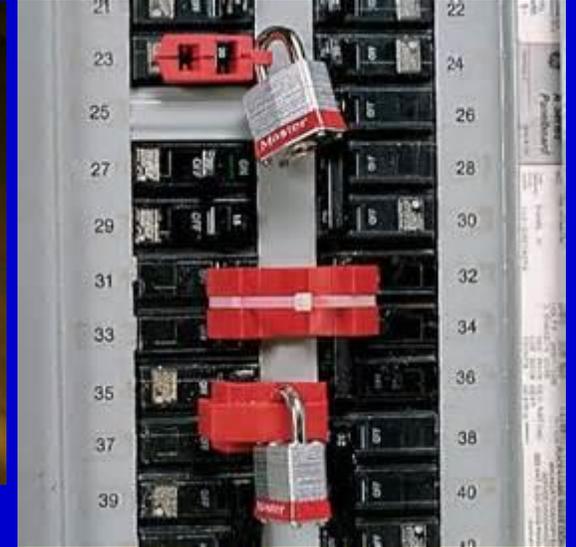
1910.147(c)(5)(ii)(C) -**Substantial** -

1910.147(c)(5)(ii)(C)(1) - Lockout devices. Lockout devices shall be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.

LOCKOUT EXAMPLES



BAD LOCKOUT EXAMPLES



1910.147(c)(6) - Periodic inspection.

1910.147(c)(6)(i) - The employer shall conduct a periodic inspection of the energy control procedure **at least annually** to ensure that the procedure and the requirements of this standard are being followed.

1910.147(c)(6)(i)(A) - The periodic inspection shall be performed by an authorized employee other than the ones(s) utilizing the energy control procedure being inspected.

1910.147(c)(6)(i)(B) - The periodic inspection shall be conducted to correct any deviations or inadequacies identified.

1910.147(c)(6)(i)(C) - Where lockout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized employee, of that employee's responsibilities under the energy control procedure being inspected.

1910.147(c)(6)(i)(D) - Where tagout is used for energy control, the periodic inspection shall include a review, between the inspector and each authorized and affected employee, of that employee's responsibilities under the energy control procedure being inspected, and the elements set forth in paragraph (c)(7)(ii) of this section.

1910.147(c)(6)(ii) - The employer **shall certify that the periodic inspections have been performed**. The certification shall identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing the inspection.

1910.147(c)(7) - Training and communication.

1910.147(c)(7)(i)

The employer **shall provide training** to ensure that the purpose and function of the energy control program are **understood** by employees and that the knowledge and skills required for the safe application, usage, and removal of the energy controls are acquired by employees. The training shall include the following:

1910.147(c)(7)(i)(A)

Each authorized employee shall receive training in 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**.

1910.147(c)(7)(i)(B)

Each affected employee shall be instructed in the **purpose and use of the energy control procedure**.

1910.147(c)(7)(i)(C)

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.

1910.147(d) - Application of control.

The established procedures for the application of energy control (the lockout or tagout procedures) shall cover the following elements and actions and shall be done in the following sequence:

1910.147(d)(1) 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.

1910.147(d)(2) Machine or equipment shutdown.

The machine or equipment shall be turned off or shut down using the procedures established for the machine or equipment. An orderly shutdown must be utilized to avoid any additional or increased hazard(s) to employees as a result of the equipment stoppage.

1910.147(d)(3) Machine or equipment isolation.

All energy isolating devices that are needed to control the energy to the machine or equipment shall be physically located and operated in such a manner as to isolate the machine or equipment from the energy source(s).

1910.147(d)(4) - Lockout or tagout device application.

1910.147(d)(4)(i) Lockout or tagout devices shall be **affixed to each energy isolating device** by authorized employees.

1910.147(d)(4)(ii) **Lockout devices**, where used, shall be affixed in a manner to that will **hold the energy isolating devices in a "safe" or "off" position.**

1910.147(d)(4)(iii) **Tagout devices**, where used, shall be affixed in such a manner as will clearly indicate that the **operation or movement of energy isolating devices from the "safe" or "off" position is prohibited.**

1910.147(d)(4)(iii)(A) 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.

1910.147(d)(4)(iii)(B) 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.

1910.147(e) Release from lockout or tagout.

Before lockout or tagout devices are removed and energy is restored to the machine or equipment, procedures shall be followed and actions taken by the authorized employee(s) to ensure the following:

1910.147(e)(1) - **The machine or equipment.** The work area shall be inspected to ensure that nonessential items have been removed and to ensure that machine or equipment components are **operationally intact**.

1910.147(e)(2) – (e) (3)

1. Employees. The work area shall be checked to ensure that **all employees have been safely positioned or removed**.
2. 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 device(s) have been removed.
3. Lockout or tagout devices removal. Each lockout or tagout device shall be removed from each energy isolating device **by the employee who applied the device**. Exception to paragraph (e)(3): 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 the employer, provided that specific procedures and training for such removal have been developed, documented and incorporated into the employer's energy control program. The employer shall demonstrate that the **specific procedure provides equivalent safety** to the removal of the device by the authorized employee who applied it. The specific procedure shall include at least the following elements:

Verification by the employer that the authorized **employee who applied the device is not at the facility**:

Making **all reasonable efforts to contact** the authorized employee to inform him/her that his/her lockout or tagout device has been removed; and Ensuring that the **authorized employee has this knowledge before** he/she resumes work at that facility.

1910.147(f)(2) - Outside personnel (contractors, etc.).

1910.147(f)(2)(i) Whenever outside servicing personnel are to be engaged in activities covered by the scope and application of this standard, the **on-site employer and the outside employer shall inform each other of their respective lockout or tagout procedures.**

1910.147(f)(2)(ii) The on-site employer shall ensure that his/her employees **understand and comply** with the restrictions and prohibitions of the outside employer's energy control program.

1910.147(f)(3) - Group lockout or tagout.

1910.147(f)(3)(i) When servicing and/or maintenance is performed by a crew, craft, department or other group, they shall utilize a procedure which affords the employees a **level of protection equivalent** to that provided by the implementation of a personal lockout or tagout device.

1910.147(f)(3)(ii) Group lockout or tagout devices shall be used in accordance with the procedures required by paragraph (c)(4) of this section including, but not necessarily limited to, the following specific requirements:

1910.147(f)(3)(ii)(A) - **Primary responsibility is vested in an authorized employee** for a set number of employees working under the protection of a group lockout or tagout device (such as an operations lock)

1910.147(f)(3)(ii)(B) Provision for the authorized employee to **ascertain the exposure status of individuals** with regard to the lockout or tagout of the machine or equipment and

1910.147(f)(3)(ii)(C) When more than one crew, craft, department, etc. is involved, assignment of overall job-associated lockout or tagout **control responsibility to an authorized employee designated to coordinate** affected work forces and ensure continuity of protection; and

1910.147(f)(3)(ii)(D) **Each** authorized employee **shall affix a personal** lockout or tagout device **to the group** lockout device, group lockbox, or comparable mechanism 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.

1910.147(f)(4) Shift or personnel changes.

Specific procedures shall be utilized during shift or personnel changes to **ensure the continuity** of lockout or tagout protection, including provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees, to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

Case Study: Automotive Component Lubrication Robotics

At an employer's automotive component manufacturing facility, manufacturing operations make extensive use of robots located within fenced cages. At one location, suspension parts are transferred by rotating tables from station to station while greasing and other operations are performed on the parts by robots. If necessary, employees can gain access to the robots by entering the cages through electrically interlocked gates. When the gates are opened, the multiple energy sources that power the robots, rotating tables, and related machinery are turned off but are not deenergized or locked out. An employee who is inside a cage when a robot is activated could be struck by the robot arm or other machine parts and seriously injured.

Part 2-Case Study: Automotive Component Lubrication Robotics

An injury occurred when an employee, consistent with the employer's practices, entered the robot cage without deenergizing or locking out any equipment. The employee was attempting to unjam a robot arm. In freeing the arm, the employee tripped an electric eye, causing the robot arm to cycle. The employee's arm was struck by the robot and injected with grease. The employer contends that lockout procedures were not necessary because once the gate is opened, movement of the robot arm is impossible, and a maintenance worker inside the cage would have ample warning – by the closing of the interlocked gate – before the machinery started up, to avoid injury. According to the employer, once the interlocked gate is opened, it must first be closed and a number of buttons must be pushed before any machine movement can occur. The startup procedure would take some time and the person inside the robot area would be aware of the closing of the gate and the presence of another worker at the nearby control panel.

Question 1 for Case Study:

Does the unjamming operation take place during normal production operations?

Yes

or

No

Answer 1 for Case Study: NO

Correct.

The unjamming operation does not take place during normal production operations.

- The operation takes place while the robot is shut down and the robot is not performing its intended production function.
- By opening the gate and entering the fenced area, the employee is bypassing the safety device and exposing himself to injury from the unexpected start up of the equipment.

Question 2 for Case Study 2:

Would the minor servicing exception apply to this situation?

Yes

or

No

Answer 2 for Case Study: NO

Correct.

The unjamming of the robot arm does not meet each of the required criteria for the minor servicing exception;

- unjamming operation does not take place during normal production operations, as specified in the minor servicing exception note to [29 CFR 1910.147\(a\)\(2\)\(ii\)](#).
- In addition, the unjamming operation does not use alternative measures which provide effective protection.

Question 3 for Case Study:

Was the activity performed by the employee covered by the Lockout/Tagout standard?

Yes

or

No

Answer 3 for Case Study: YES

Correct. This activity was covered by the Lockout/Tagout standard.

The Lockout/Tagout standard covers servicing and/or maintenance activities performed on machines or equipment only where servicing and/or maintenance employees are exposed to the unexpected energization, start up, or release of hazardous energy.

Question 4 for Case Study 2:

In this situation, would the interlocked gate alone satisfy the employer's Lockout/Tagout obligations?

Yes

or

No

Answer 4 for Case Study: NO

Correct.

The interlocked gate would not meet the requirements for an energy isolation device. In this case, the interlocked gate is considered to be control circuitry which is expressly prohibited by the rule. It does not protect employees who are inside the fenced area because **it fails to de-energize the robot arm.**

Question 5 for Case Study 2:

The employer contends that de-energizing and locking out a robot wipes out the robot's memory and requires time-consuming reprogramming. Based on this alone, could the employer claim that shutting down the robot was impractical and thus, claim that the unjamming task was exempted?

Yes

or

No

Answer 5 for Case Study: NO

Correct.

The employer still has an obligation to provide the servicing and/or maintenance employees protection if they are exposed to the unexpected energization, start-up, or release of stored energy, which could cause injury. The standard provides no exemption simply because an employer would be required to take additional steps or implement additional controls to effectively protect employee engaged in servicing and/or maintenance work. The robot could have been rewired to eliminate the problem of computer memory loss, or could be reprogrammed using a slave computer to transfer the necessary data and instructions to the robot's computer.

For more information: To better evaluate this specific case study, refer to the 6th Circuit Court decision in the [Secretary of Labor vs. General Motors Corporation, Delco Chassis Division](#), OSHRC Docket numbers 91-2973, 91-3116, and 91-3117.