

Memorandum

Date: February 11, 2016

To: Marley Hart, Executive Officer
Occupational Safety and Health Standards Board
2520 Venture Oaks Way, Suite 350
Sacramento, CA 95833

From: Juliann Sum, Chief
Division of Occupational Safety and Health



Subject: Division Evaluation of Petition 552 from Rob Neenan, California League of Food Processors

1.0 INTRODUCTION AND BACKGROUND

On November 10, 2015, the Division of Occupational Safety and Health (Cal/OSHA) received Petition 552 to amend Title 8, California Code of Regulations, section 3314 (The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout). Rob Neenan, President of the California League of Food Processors, filed the petition.

Title 8 section 3314 contains requirements for protecting employees from injury due to the unexpected energization, release of stored energy, or start-up of equipment during cleaning, repairing, servicing, setting-up and adjusting. Operational guarding and protective devices may be disabled or otherwise fail to protect employees during these activities.

The exemption in section 3314, which is the subject of the petition, pertains to electrical equipment which is energized through a cord plugged into an electrical outlet and can be completely de-energized by unplugging the equipment. Such equipment, referred to as cord and plug equipment, is exempt from subsection (c) and (d) of section 3314 if the plug is under the exclusive control of the employee who is working on the equipment. The exemption is referred to as the "*cord and plug*" exception. Such equipment is still required to comply with all remaining subsections of section 3314.

The petitioner requests that cord and plug connected electrical equipment be exempted completely from Title 8 section 3314 and not just subsections (c) and (d). The petitioner also states that the existing language in the regulation

regarding cord and plug equipment is ambiguous and recommends that it be amended and/or replaced with the language contained in the corresponding federal OSHA regulation, Title 29 Code of Federal Regulations (CFR) section 1910.147.

2.0 CALIFORNIA CODE OF REGULATIONS TITLE 8 SECTION 3314

The regulation subject to the petition request is the following:

California Code of Regulations
Title 8. Industrial Relations
Subchapter 7. General Industry Safety Orders
Group 2. Safe Practices and Personal Protection
Article 7. Miscellaneous Safe Practices

§3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout.

(a) Application.

(1) This Section applies to the cleaning, repairing, servicing, setting-up and adjusting of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy could cause injury to employees.

(2) For the purposes of this Section, cleaning, repairing, servicing and adjusting activities shall include unjamming prime movers, machinery and equipment.

(3) Requirements for working on energized electrical systems are prescribed in Sections 2320.1 through 2320.9 or 2940 through 2945.

(b) Definitions:

Affected employee. For the purpose of this section, an employee whose job requires them to operate or use a machine or equipment on which cleaning, repairing, servicing, setting-up or adjusting operations are being performed under lockout or tagout, or whose job requires the employee to work in an area in which such activities are being performed under lockout or tagout.

Authorized employee or person. For the purposes of this section, a qualified person who locks out or tags out specific machines or equipment in order to perform cleaning, repairing, servicing, setting-up, and adjusting operations on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties including performing cleaning, repairing, servicing, setting-up and adjusting operations covered under this section.

Locked out. The use of devices, positive methods and procedures, which will result in the effective isolation or securing of prime movers, machinery and equipment from mechanical, hydraulic, pneumatic, chemical, electrical, thermal or other hazardous energy sources.

Normal Production Operations. The utilization of a machine or equipment to perform its intended production function.

Prime Mover. The source of mechanical power for a machine.

(c) Cleaning, Servicing and Adjusting Operations.

Machinery or equipment capable of movement shall be stopped and the power source de-energized or disengaged, and, if necessary, the moveable parts shall be mechanically blocked or locked out to prevent inadvertent movement, or release of stored energy during cleaning, servicing and adjusting operations. Accident prevention signs or tags or both shall be placed on the controls of the power source of the machinery or equipment.

(1) If the machinery or equipment must be capable of movement during this period in order to perform the specific task, the employer shall minimize the hazard by providing and requiring the use of extension tools (eg., extended swabs, brushes, scrapers) or other methods or means to protect employees from injury due to such movement. Employees shall be made familiar with the safe use and maintenance of such tools, methods or means, by thorough training.

(d) Repair Work and Setting-Up Operations.

Prime movers, equipment, or power-driven machines equipped with lockable controls or readily adaptable to lockable controls shall be locked out or positively sealed in the "off" position during repair work and setting-up operations. Machines, equipment, or prime movers not equipped with lockable controls or readily adaptable to lockable controls shall be considered in compliance with Section 3314 when positive means are taken, such as de-energizing or disconnecting the equipment from its source of power, or other action which will effectively prevent the equipment, prime mover or machine from inadvertent movement or release of stored energy. In all cases, accident prevention signs or tags or both shall be placed on the controls of the equipment, machines and prime movers during repair work and setting-up operations.

EXCEPTIONS to subsections (c) and (d): [Emphasis Added]

1. Minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations are not covered by the requirements of Section 3314 if they are routine, repetitive, and integral to the use of the equipment or machinery for production, provided that the work is performed using alternative measures which provide effective protection.

2. Work on cord and plug-connected electric equipment for which exposure to the hazards of unexpected energization or start up 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 work. [Emphasis Added]

3. Where an employer has a uniform system with unique and personally identifiable locks designed for lockout, that are placed on the source of energy, accident prevention signs or tags are not required.

(e) Materials and Hardware. The employer shall provide accident prevention signs, tags, padlocks, seals or other similarly effective means which may be required for cleaning, servicing, adjusting, repair work or setting-up operations. Signs, tags, padlocks, and seals shall have means by which they can be readily secured to the controls. Tagout device attachment means shall be of a non-reusable type, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds.

(f) Repetitive Process Machines. On repetitive process machines, such as numerical control machines, which require power or current continuance to maintain indexing and where repair, adjustment, testing, or setting-up operations cannot be accomplished with the prime mover or hazardous energy source disconnected, such operations may be performed under the following conditions:

(1) The operating station where the machine may be activated must at all times be under the control of a qualified operator or craftsman.

(2) All participants must be in clear view of the operator or in positive communication with each other.

(3) All participants must be beyond the reach of machine elements which may move rapidly and present a hazard to them.

(4) Where machine configuration or size requires that the operator leave his control station to install tools, and where machine elements exist which may move rapidly if activated, such elements must be separately locked out by positive means.

(5) During repair procedures where mechanical components are being adjusted or replaced, the machine shall be de-energized or disconnected from its power source.

NOTE: "Participant" shall mean any other person(s) engaged in the repair, adjustment, testing, or setting up operation in addition to the qualified operator or craftsman having control of the machine operating station.

(g) Hazardous Energy Control Procedures. A hazardous energy control procedure shall be developed and utilized by the employer when employees are engaged in the cleaning, repairing, servicing, setting-up or adjusting of prime movers, machinery and equipment.

(1) The procedure 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:

(A) A statement of the intended use of the procedure;

(B) The procedural steps for shutting down, isolating, blocking and securing machines or equipment to control hazardous energy;

(C) The procedural steps for the placement, removal and transfer of lockout devices and tagout devices and responsibilities; and,

(D) The requirements for testing a machine or equipment, to determine and verify the effectiveness of lockout devices, tagout devices and other hazardous energy control devices.

(2) The employer's hazardous energy control procedures shall be documented in writing.

(A) The employer's hazardous energy control procedure shall include separate procedural steps for the safe lockout/tagout of each machine or piece of equipment affected by the hazardous energy control procedure.

EXCEPTION to subsection (g)(2)(A): The procedural steps for the safe lockout/tagout of prime movers, machinery or equipment may be used for a group or type of machinery or equipment, when either of the following two conditions exist:

(1) Condition 1:

(A) The operational controls named in the procedural steps are configured in a similar manner, and

(B) The locations of disconnect points (energy isolating devices) are identified, and

(C) The sequence of steps to safely lockout or tagout the machinery or equipment are similar.

(2) Condition 2: The machinery or equipment has a single energy supply that is readily identified and isolated and has no stored or residual hazardous energy.

(h) Group Lockout or Tagout.

(1) 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 utilization of a personal lockout or tagout device.

(2) Group lockout or tagout devices shall be used in accordance with the procedures required by subsection (g) and also in accordance with requirements that include, but are not necessarily limited to, the following:

(A) Primary responsibility shall be 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);

(B) Provision shall be made for the authorized employee to ascertain the exposure status of individual group members with regard to the lockout or tagout of the machine or equipment;

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

(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.

(i) Shift or Personnel Changes.

Specific hazardous energy control procedures (i.e. lock-out/tag-out) shall be utilized during shift or personnel changes to ensure the continuity of lockout or tagout protection, including, but not necessarily limited to, provision for the orderly transfer of lockout or tagout device protection between off-going and oncoming employees, in order to minimize exposure to hazards from the unexpected energization or start-up of the machine or equipment, or the release of stored energy.

(j) Periodic Inspection.

The employer shall conduct a periodic inspection of the energy control procedure(s) at least annually to evaluate their continued effectiveness and determine necessity for updating the written procedure(s).

(1) The periodic inspection shall be performed by an authorized employee or person other than the one(s) utilizing the hazardous energy control procedures being inspected.

(2) Where lockout and/or tagout is used for hazardous energy control, the periodic inspection shall include a review between the inspector and authorized employees of their responsibilities under the hazardous energy control procedure being inspected.

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

(k) Whenever outside servicing personnel are to be engaged in activities covered by this section, the on-site employer's lockout or tagout procedures shall be followed.

(l) Training.

(1) Authorized employees shall be trained on hazardous energy control procedures and on the hazards related to performing activities required for cleaning, repairing, servicing, setting-up and adjusting prime movers, machinery and equipment.

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

(3) All other employees whose work operations may be in an area where energy control procedures may be utilized, shall be instructed about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.

(4) Such training shall be documented as required by Section 3203.

3.0 FEDERAL OSHA REGULATION

The corresponding federal OSHA regulation exempts work on cord and plug-connected electric equipment from the entire regulation provided that the equipment is unplugged and the plug is under control of the employee working on the equipment.

Title 29 Code of Federal Regulations (CFR)

1910.147 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)(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 start up 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.

[Emphasis Added]

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4.0 CONSENSUS STANDARDS

The American National Standards Institute (ANSI) has published a consensus standard regarding the control of hazardous energy similar to the Title 8 and federal OSHA regulations. Like the federal OSHA standard, the ANSI standard also exempts work on cord and plug-connected electric equipment working on the equipment from the entire standard if the equipment is unplugged and under control of the employee:

ANSI/ASSE Z244.1- 2003 Control of Hazardous Energy Lockout/Tagout and Alternative Methods

* * * * *

1.3 Application.

This standard applies to, but is not limited to, activities such as, erecting, installing, constructing, repairing, adjusting, inspecting, unjamming, setting up, trouble-shooting, testing, cleaning, dismantling, servicing and maintaining machines, equipment or processes.

This standard does not apply to work on cord and plug connected electrical equipment for which exposure to the hazards of unexpected energization or start up 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 individual performing the servicing or maintenance. [Emphasis Added]

The ANSI/ASSE Z44.1-2003 standard is not incorporated by reference within Title 8 Safety Orders.

4.0 BASIS FOR THE PETITION

4.1 Actual intent of the California standard

The petitioner states that Cal/OSHA has misinterpreted the “*cord and plug*” exception to apply only to subsection (c) and (d) in Title 8 section 3314 and that the exception in reality applies to the entire section. According to the petitioner, the exception should be re-written so that it applies to the entire regulation to remove ambiguity.

4.2 Readability of the language in the federal standard

In addition, the petitioner states that the language of the “*cord and plug*” exception in the federal regulation is easier to read and understand. The petition would purportedly benefit Cal/OSHA, employers and employees by making the regulation easier to comprehend.

5.0 Discussion

5.1 The “*cord and plug*” exception clearly applies only to subsections (c) and (d)

The language of the “*cord and plug*” exception in section 3314 is clear that it applies only to subsections (c) and (d). The title of the exception is “***EXCEPTIONS to subsections (c) and (d).***” The plain language of the regulation is obvious and there is no ambiguity that the exception may apply to other subsections of 3314.

The California Occupational Safety and Health Appeals Board agreed with Cal/OSHA that the exception only applies to subsections (c) and (d) of section 3314 in the following decision: *Syar Industries, Cal-OSHA App. 13-1876-1880, Decision (July 24, 2015).*

5.2 The language of the “*plug and cord*” exception in Title 8 is just as easy to understand as the federal OSHA exception

The language of the “*plug and cord*” exception is different in Title 8 than the federal OSHA regulation. Federal OSHA exempts the entire regulation while Title 8 exempts only subsections (c) and (d). However, the Title 8 exception is clear and easily understandable. There are no possible changes which would make the scope of the exception more comprehensible.

5.3 The “*plug and cord*” exception to subsections (c) and (d) is reasonable

5.3.1 3314 subsection (c)

The exception to subsection (c) relieves the employer of the duty to place accident prevention signs or tags on the power source of equipment which has been de-energized prior to cleaning, servicing or adjusting of the equipment. The exception also releases the employer of the requirement to block or lockout moving parts of the equipment.

The exception to subsection (c) of section 3314 is logical as tags or signs are not needed on the power source if the plug is under the control of the employee working on the equipment. The only way to energize equipment is through the plug which cannot be done while the employee controls the plug.

3.2 3314 subsection (d)

When the “*cord and plug*” exception is applicable, the employer is not required to lock out the controls of equipment in the off position during repair work and setting-up operations. In addition, accident prevention signs or tags are not required to be placed on the controls of the equipment.

Subsection (d) is similar to (c) in that it contains requirements for guarding the point of energization of equipment to prevent inadvertent movement or other energy in equipment which may harm the persons working on the equipment. For similar reasons as subsection (c), a plug does not need such guarding if under control of the employee working on the equipment.

5.4 Application of the remaining subsections of section 3314 to plug and cord equipment

Cal/OSHA has long recognized the inherent danger of working around energized machinery. Cal/OSHA has an extensive history of investigating lacerations, amputations, crushing injuries, electric shock and deaths from failure to properly de-energize equipment during adjustments, cleaning, maintenance or repairs. As

discussed below, subsections (e) through (l) are either inapplicable to cord and plug equipment or provide important and necessary employee protection.

5.4.1 3314(e) Materials and Hardware.

This subsection requires employers to have tags and locks necessary for subsection (c) and (d). This subsection is neither enforceable nor applicable to equipment covered by the “*cord and plug*” exception. Since this subsection is not enforceable for cord and plug equipment, there is no need to extend the exemption to include it.

5.4.2 3314(f) Repetitive Process Machines.

This subsection applies to machines that must remain energized while employees perform work on the equipment. If cord and plug equipment must be energized while working on it, this subsection contains necessary safety requirements for employee protection. Since equipment covered by this subsection is not unplugged, the “*cord and plug*” exception would not apply even if the exemption was expanded to include subsection (f).

5.4.3 3314(g) Hazardous Energy Control Procedures

The employer must develop and implement written instructions for safely de-energizing and testing equipment prior to employees working on the equipment. This subsection is necessary for cord and plug equipment to ensure employees are aware of the necessary safe procedures prior to cleaning, adjusting, servicing and repairing the equipment. Although safety procedures are typically easier to put in place for plug and cord equipment than other more complex machinery, this does not negate the need for such procedures. Cord and plug equipment is equally capable of causing serious injury or death as other machinery.

In the Syar Appeals Board Decision cited in section 5.1 of this evaluation above, an employee was cleaning a cord and plug connected band saw. The employer did not develop nor implement procedural steps for shutting down and cleaning the band saw. An employee attempted to clean the band saw while it was running and suffered a finger amputation. Had the employer implemented procedures for shutting down the band saw prior to cleaning as required by 3314(g), the accident could have been prevented.

In addition, employees may work on multiple pieces of similar cord and plug equipment simultaneously. In these situations, confusion, errors and accidentally energizing the wrong equipment is more likely to take place and endanger employees. The implementation of energy control procedures is necessary to prevent such occurrences.

Adopting the petition would reduce employee safety by excluding cord and plug connected electric equipment from the necessary protections in this subsection.

5.4.4 3314(h) Group Lockout or Tagout

The requirements of subsection 3314(h) are to ensure that when a group of employees is working on equipment, the employees are provided the same level protection as when an individual is working on equipment. The procedural requirements of the subsection are applicable to a group of employees working on cord and plug equipment. The group procedures required by subsection (h) are necessary for cord and plug connected equipment to ensure that the equipment is not plugged in and energized by one employee without the knowledge of other employees. With greater numbers of people working on equipment, the chances of miscommunication and errors increase. Safe procedures for group lockout/tagout are necessary to prevent inadvertently energizing equipment and endangering employees.

Adopting the petition would reduce employee safety by not requiring safe energy control procedures when there are multiple employees working on equipment and machinery.

5.4.5 3314(i) Shift or Personnel Changes.

Subsection 3314(i) requires the continuity of the hazardous energy control procedures during shift or personnel changes. Safe energy control procedures for cord and plug equipment are necessary as discussed in section 5.4.3 of this evaluation. Such procedures also need to be continuous across shift or personnel changes for cord and plug equipment as they would with other pieces of equipment. The hazards of unexpected energization remain the same as different employees perform work on machinery and safe procedures must remain in place to control the hazards. Adoption of the petition would allow the safe energy control procedures to be discontinued when an employee resumes work on cord and plug machinery which was started by another employee.

5.4.6 3314(j) Periodic Inspection.

Employers are required to conduct an annual review of their energy control procedures to determine their continued effectiveness and if updates are necessary. Such reviews are necessary for cord and plug equipment to determine if employees are correctly following the procedures. If employees are not following procedures, additional training and other steps may be necessary to ensure compliance with the procedures. Failure to follow procedures may lead to serious injuries. Exempting the requirement of this subsection would reduce employee safety by allowing non-compliant activities to proceed undetected.

5.4.7 3314(k) Outside servicing personnel

When outside contractors or other personnel not directly employed by the facility conduct work on equipment, they are required to follow the same energy control

procedures as the employees of the facility. This requirement is necessary for cord and plug type equipment as well.

Outside personnel that fail to follow the facilities procedures and do not de-energize cord and plug equipment which is being worked on are at risk of serious injury. The outside employees are entitled to the same protection as the facility employees.

In addition, the facility personnel can easily verify that the outside employees are properly protected if they follow the facilities procedures. The facility personnel will not be able to verify procedures which they are not familiar with.

When outside employees work together with facility employees, error and unexpected energization is more likely if all persons are not following the same procedures. The use of common energy control procedures enhances the safety of both the facility and outside employees.

5.4.8 3314(l) Training

Subsection 3314(l) requires employees who work on equipment to be trained on the energy control procedures. The same training is necessary for employees working on cord and plug equipment. Employees need to be knowledgeable of the hazards of the equipment and necessary methods for safely working on the equipment to prevent serious injury or death.

Adopting the petition would reduce employee safety by allowing untrained employees to work on hazardous machinery.

6.0 CONCLUSION

The petitioner is correct that the "*cord and plug*" exception in section 3314 is not identical to the corresponding federal OSHA regulation, 29 CFR 1910.147. Title 8 is more protective than the federal OSHA standard. The additional protection is necessary as cord and plug equipment encompasses a wide variety of machinery, many of which expose employees who work on the equipment to serious hazards. Because it may be easier to control hazards on cord and plug equipment does not nullify the need for safe work procedures and practices.

Cal/OSHA recommends that the Petitioner's request to amend Title 8 Section 3314 to expand the "cord and plug" exception be denied.