

## OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

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### FINAL STATEMENT OF REASONS

#### CALIFORNIA CODE OF REGULATIONS

Title 8, Division 1, Chapter 4, Subchapter 7, Article 12,  
Sections 3420 – 3428 of the General Industry Safety Orders; and  
Chapter 4, Subchapter 5, Article 38, Section 2950 of the  
High Voltage Electrical Safety Orders.

#### Tree Work, Maintenance or Removal

There are no modifications to the information contained in the Initial Statement of Reasons except for the following sufficiently related modifications that are the result of public comments and/or Board staff evaluation.

#### Section 3420(b). Definitions.

The proposal as noticed for public comment includes a number of new definitions for subsection (b). A modification of the proposed definition of “drop zone” is necessary in order to clarify that the drop zone area must be established by a qualified tree worker.

The term “proximity” is used in several requirements of the proposal, such as proposed Section 3423(a), to establish when certain actions must be taken to avoid electrical hazards that are presented during tree work operations in the vicinity of energized conductors. A comment was received that a definition should be provided for this term. The Board agrees, and a definition of “proximity” consistent with the ANSI Z133.1 – 2006 standard is added to subsection (b).

The original proposal also includes a new definition for the term “Prusik Loop.” A comment was made that the definition includes reference to the term “prusik knot,” and some individuals may not know what that type of knot is. A parenthetical modification is proposed to clarify that the prusik knot is a sliding friction knot.

Further, comments were made that the definition of “secured (person)” would require the employee avoid any type of “unintended movement” which could create confusion for both the employer and compliance personnel. For example, a minor slip or misstep without any potential safety consequences may be prohibited. Therefore, a modification is proposed that deletes the phrase “from unintended movement” from the definition.

### Section 3421(h)

This section contains the general requirements related to tree work operations. Subsection (h), as originally proposed, would require all equipment and safety devices to be inspected prior to use. A comment was received that the term “prior to use” as used in this subsection is unclear as to what is expected (e.g., prior to initial use, prior to the shift or prior to a project). It is noted that Section 3422(j) would require inspection of climbing equipment prior to each use that involves re-rigging or moving the climbing system, and Section 3424(a)(2) requires daily inspection of vehicles and mobile equipment. As a result, a modification is necessary to resolve this ambiguity.

### Section 3422

Section 3422 provides requirements related to ropes and tree worker climbing equipment.

### Subsection (c)

This subsection sets forth the minimum diameter and design requirements for climbing lines. The original proposal specified that climbing lines shall be a minimum diameter of 7/16 inch. Federal OSHA commented that the ANSI Z133.1 -2006 standard, Section 8.1.8 only permits the use of 7/16 inch climbing lines as an exception. The ANSI standard provides, in part, that 7/16 inch climbing line may be used, but it must meet the strength and elongation ratings for ½ inch diameter climbing line and employees must be instructed in its use. In order to address federal OSHA’s concern, modifications are proposed to add an “exception” that addresses the use of 7/16 inch diameter climbing line.

### Subsection (f)

Subsection (f) as originally proposed states that climbing lines shall not be used to lower limbs or other parts of trees. Tree work representatives have stated that climbing line is used in tree work operations for other purposes when it is no longer used as a climber’s line, such as the lowering of low weight loads (small limbs or branches).

The regulation as written would prohibit ever using climbing line for any other purpose than to support the tree worker aloft as part of a fall protection system. According to stakeholders, once a climbing line is used for other purposes, such as lowering loads or moving materials it should never be used again to serve as a climber’s line. Therefore, subsection (f) is modified accordingly.

### Subsection (g)

This subsection states that climbing line shall never be left unattended in trees. A comment pertaining to this subsection noted that the term “unattended” lacks clarity. For example, could the lines be left in the tree if the tree worker took a break or returned to the ground to retrieve a tool?

The intent of this provision is to prevent climbing lines from being left in trees overnight and/or in situations where a tree worker was not present to ensure that the condition and security of the climbing line was not compromised by such situations as contact with animals or unauthorized persons, etc. Therefore, a modification is necessary so that climbing lines never be left in trees when there is no qualified tree worker at the job site location.

Subsection (j)

This provision as originally proposed would require in part that ropes, climbing equipment, tackle blocks and pulleys shall be inspected for damage, cuts, abrasions and/or deterioration before each use. Upon further evaluation of this provision it is determined that the term “before each use” lacks clarity without further modification. Consequently, a modification is necessary to clarify that the inspection is required before each use that involves re-rigging or moving the climbing system.

Section 3424(c)(11)

Subsection (c) addresses provisions related to brush chippers. Subsection (c)(11), as originally proposed, states that material, such as stones, nails, and similar debris, shall not be fed into the brush chipper. One of the comments received from the California Department of Public Health stated in part that, in two of their investigations, rope was entangled in the debris pile and was fed into the wood chipper. Fatal injuries have resulted when employees have been struck by the rope. In post public hearing discussions, the Division also shared concerns with Board staff that ropes entering the point of operation of brush chippers present a serious hazard to the operator. Therefore, a modification is proposed for subsection (c)(11) that states ropes that present an entanglement hazard shall be prevented from entering the point of operation of the chipper. The modification is necessary to increase the employer’s awareness of this hazard and the actions necessary in order to avoid rope related hazards to the chipper operator (e.g., training and visual inspection of materials before tree parts/stock are placed into the chipper).

Section 3427(c)(4)

Section 3427 includes the requirements for a broad range of safe tree work procedures including climbing and access into trees, pruning and trimming operations, and felling of trees. Subsection (c) addresses tree felling operations, and proposed subsection (c)(4) in part requires that just before the tree or tree trunk is ready to fall, an audible warning be given to those in the area. It is noted that ANSI Z133.1- 2006, Section 8.5.18, also addresses warnings for use in tree felling operations. In addition to verbal warnings, the ANSI standard permits the use of pre-arranged, two-way hand signals. As a result of further evaluation of the proposal, a modification of Section 3427(c)(4) is made that permits the use of pre-arranged two-way hand signals. This modification is necessary to provide an alternative warning method that is consistent with the ANSI standard. Also, for consistency with the language in the first sentence of this subsection, a modification for clarity in the last sentence is necessary to add the words, “or trunk” after the word “tree.”

High-Voltage Electrical Safety Orders (HVESO)

Article 38. Line Clearance Tree Trimming Operations

Section 2950(b)

Section 2950 of the HVESO addresses line clearance tree trimming operations and exposures to exposed energized conductors and equipment. A new subsection (b) as originally proposed provides that minimum approach distances to energized conductors for persons other than qualified line clearance tree trimmers and trainees shall be maintained in accordance with Table 1. An exception permits a qualified tree worker that has been trained and meets the provisions

outlined in GISO Section 3423 (related to electrical hazards) to perform tree trimming activities within 10 feet, but no closer than 1 foot, of energized low voltage (600 volts or less) power lines and conductors.

Comments were received from several utility companies that the language of Section 2950(b) would prevent both a qualified electrical worker (QEW) and a qualified telecommunications worker (QTW) from removing any type of tree limb, branch or other growth that would interfere with the restoration of power during emergencies such as power outages. QEWs and QTWs are highly trained and skilled and allowed in their industry specific safety orders to work in close proximity to high voltage energized conductors.

During power outages and similar emergencies it may be necessary for a QTW or QEW to remove a limb, branch or other growth from areas in the vicinity of overhead power lines. Therefore, exception Nos. 2 and 3 are necessary as modifications to the proposal to allow QTWs and QEWs to remove tree parts associated with power restoration or other emergency work provided that they are trained and experienced in the special techniques and work procedures required to avoid the hazards of line clearance tree trimming operations.

#### Summary and Response to Oral and Written Comments:

##### I. Written Comments

Mr. Mark Garvin, President, Tree Care Industry Association (TCIA), by letter dated February 7, 2012.

##### Comment:

TCIA served on the advisory committee that helped to draft the amendments for this rulemaking action. He noted that the proposed revisions will help Cal/OSHA make the most efficient and effective use of its human resources. Whether in consultation or enforcement, Cal/OSHA's field personnel will be better informed to assess the potential risks in the tree care operations they encounter, and to provide more constructive guidance to employer and employee, using the revised General Industry Safety Orders (GISO) Sections 2950 and 3420-3428 as their guide. These revisions provide tree care workers and employers with unambiguous, easily accessible regulatory guidance on the specific safety measures needed to reduce or eliminate the unique risks in our industry. In summary, TCIA supports the Board's rulemaking process and encourages the Board to adopt the proposed revisions to Title 8.

##### Response:

The Board thanks Mr. Garvin and TCIA for their support of the proposal, comments and participation in the Board's rulemaking process.

Mr. Bill Taylor, CSP, Public Agency Safety Management Association-South Chapter, Legislative/Regulatory Chairperson, by letter dated March 9, 2012.

Comment No. 1:

Several of his organization's members' cities and counties respond to emergency situations such as windstorms, floods, and other weather events which often result in the removal of tree branches from public streets and right of ways. He stated that most public agencies will dispatch all available trained public works personnel to respond to these emergency incidents in order to restore essential public services. Their concern is that Section 3421(m) would essentially mandate that every public works employee with a field assignment maintain a current First Aid/CPR certification, even though fatality and injury data do not justify such a requirement.

Response:

Section 3420(a) states that the standard applies to work performed and equipment used in tree maintenance and removal. If public works personnel are used to remove or pickup tree branches or brush that have fallen onto areas such as public streets, driveways and sidewalks, that clean up and road clearing work would not necessarily fall within the description and requirements of Article 12, including Section 3421(m). In this scenario, the requirements for first aid would be provided in the GISO Section 3400.

However, if workers are performing activities in a crew that is using tree work equipment such as chain saws in combination with brush chippers, or are involved in bucking operations, (cutting/sawing branches, limbs or tree trunks that have fallen into appropriate removal lengths) or are using saws to trim branches or limbs still attached to the tree then they are performing tree work with equipment that is known to be hazardous and has caused serious injuries and fatalities.

The existing regulation in Section 3421(m) requires that the employer provide training in first aid and CPR. The Division enforces this to require that all employees on a site with tree work operations have first aid and CPR training. The proposed amendment was developed with the assistance of the advisory committee to provide clarity and relief on job sites with more than two persons. As an example, a tree work crew size of 3 or more employees would only require 2 first aid/CPR trained employees. Thus, not all employees require the training if they are working with at least 2 employees in work crew that are trained.

Imminent safety hazards were identified with a two-person tree work crew when only one employee is trained and one is not, and this situation is exacerbated when neither employee has training. If only one employee has the training and that is the employee injured in a serious accident, the other employee would not have the first aid training to stop the bleeding or take other appropriate measures. If neither employee is trained, as could be the case in the commenter's recommended exception for public/government employees involved in infrequent emergency tree work operations, then neither employee would have the training to perform emergency first aid/CPR until medical personnel arrives.

Employee tree work injuries and accident data often do not specify whether the injurious activity was during routine tree work, maintenance or during emergency or storm aftermath activities. Lack of training in first aid and/or CPR does not cause or result in injuries. However, in first aid and CPR

training, it is taught that a serious accident can easily become a fatal accident if no one is available to apply immediate and adequate first aid and/or CPR until medical personnel arrive.

The Board does not believe that modification to the proposal is necessary as a result of this comment.

Comment No. 2:

The amendment of Section 3421(m) will likely result in significant additional costs to public agencies. For those public agencies that have tree workers, or other employees who are assigned to tree work, maintenance, and removal activities on a regular and routine basis, we feel the First Aid/CPR mandate is justified. However, for the other employees who may only be assigned to tree work, maintenance, and removal activities on an emergency basis we believe it does not make sense, and it will likely result in significant additional costs for public agencies. An exception is recommended to the first aid and CPR requirements for employees of local government entities (any county, city, or district, or any public or quasi-public agency) during emergency related work, as a result of emergencies or other natural disasters.

Response:

Existing Section 3421(j) requires employers to provide employees involved in tree work operations with first aid and CPR training. There are no exceptions. Local government entities currently assigning public works type employees (e.g., street sweepers, lawn care, building maintenance, landscaping, refuse removal, etc.) to perform tree work activities in crews where employees are not trained/available to provide first aid/CPR would be in violation of the existing standard. Also, see the responses to Comment No. 1.

The Board disagrees with the concept that employees who are assigned to tree work, maintenance, and removal activities on an infrequent or emergency only basis should be exempt from first aid and CPR training requirements. There is a greater risk for injury when employees are performing duties outside their regular and routine assignments. Tree work, maintenance and removal work includes the use of machinery and equipment and operations that are inherently hazardous and injuries frequently would require first aid and follow up medical treatment.

The Board does not believe that modification to the proposal is necessary as a result of Mr. Taylor's comments. The Board thanks Mr. Taylor for his comments and participation in the Board's rulemaking process.

Mr. Kevin Bland, Attorney, Ogletree, Deakins, Nash, Smoak & Stewart, P.C., by letter dated March 13, 2012.

Comment No. 1:

His letter is written on behalf of the Utility Line Clearance Coalition (ULCC). ULCC members use specialized techniques that allow utility line clearance work to be done safely and, in most cases, without de-energizing electric supply lines to communities. ULCC members perform an estimated ninety percent of all utility line clearance tree trimming work performed in the nation.

Subject to the recommended revisions in its comments, ULCC supports the proposed standard. The first comment recommends a definition for the word “proximity” that should be added to the definitions in Section 3420(b). A recommended definition for the meaning of “proximity” was included in this comment.

Response:

The term “proximity” is used in this GISO Article 12, proposed standard in Sections 3420(a) Note 2; Section 3421(c)(5) and Section 3423(a) and (d). The Board agrees that clarity would be improved by defining this term. A modification of the proposal adds a definition to Section 3420(b) that is similar to that recommended in the comment and consistent with the ANSI Z133.1-2006 definition of this term.

Comment No. 2:

The definition for “drop zone” in Section 3420(b) should be revised. The clause “as determined by the arborists in charge prior to commencement of work” should be added after the word “above” in the current definition.

Response:

The reference to tree workers as “arborists” in Article 12 is avoided in order to eliminate confusion with the existing and suitable definition of a qualified tree worker. However, the Board believes there is merit in clarifying who establishes the area that encompasses the drop zone. A qualified tree worker is competent to establish the area of the drop zone, and a modification to the definition has been added accordingly.

Comment No. 3:

This comment recommends deleting the words, “unintended movement” from the definition of “secured.” The word “safeguarded” establishes the purpose of the term “secured.” Inclusion of the phrase “unintended movement” creates confusion for both compliance and enforcement as the meaning would clearly be too restrictive.

Response:

Mr. Bland discussed with staff that the term “unintended movement” could include situations with no safety consequences such as a minor slip or misstep and that the provision as written is unnecessary for safety or clarity. Board staff concurs that the comment has merit and a modification is provided to delete the term “from unintended movement.”

Comment No. 4:

The term “prior to assignment to job duties” should be added before the word “employee” in Section 3421(c) to clearly identify the timing of when such training should be performed under Section 3421(c).

Response:

The Board believes that this recommended revision is unnecessary and is already addressed in proposed Section 3421(d). Therefore, the Board does not believe that modification to the proposal is necessary as a result of this comment.

Comment No. 5:

Delete the wording “including, but not limited to” from Section 3421(c), and add an additional Section 3421(c)(6) that would require training in “other hazards known to the employer” prior to beginning work.

Response:

The phrase “including, but not limited to” or similar language is used throughout Title 8 health and safety standards. It is intended to point out that requirements that follow may not be all inclusive of the hazards associated with a procedure or operation. An example is GISO Section 5157(d)(3) related to confined space entry precautions and requirements. The hazards involved in tree work vary greatly, depending on the employer’s specialty and operations, and it is not possible to create an all inclusive hazard and training list for the industry as a whole. The Board believes that the language proposed is effective in stating the basic training and instruction for a safe operation.

As to adding a new subsection requiring that training include hazards known to the employer, this type of requirement would lack enforceability, because an employer with an ineffective safety program and unsafe operations could argue that it was not aware of a hazard even though it may be an obvious and frequent hazard encountered in that industry. The Board does not believe that modification to the proposal is necessary as a result of the recommendations in Comment No. 5.

Comment No. 6:

This comment pertains to the provisions in Section 3421(h) and questions what is intended by the requirement that “prior to use” all equipment and safety devices shall be inspected. It is unclear whether the employer would be expected to perform the inspection prior to initial use at the beginning of each shift or a particular project. For example, a block and tackle attached to a tree used to lower limbs may be used multiple times, but it would not be possible to inspect the block and tackle prior to each use.

Response:

The term “prior to use” is longstanding language that is located in Section 3421(e) of the existing standard. However, Board staff agrees that the comment raises clarity issues in light that the proposal requires several new specific inspections as outlined below. Board staff believes that this language has not been problematic in the past, because most stakeholders take this requirement to mean that a daily inspection shall be made prior to use. For certain types of equipment or devices, it is suitable to perform daily inspections. However, the ANSI Z133.1-2006 standard specifically and intentionally requires in Section 8.1.4 that climbing lines and other climbing equipment be inspected before each use. Tree industry representatives have indicated that the term “before each use” is intended to mean each time the climbing lines and associated climbing equipment (climbing system) are taken down for re-rigging or moved (e.g., installed on a new job site). Therefore, a modification for clarity is proposed for Section 3422(j).

Proposed Sections 3422(j) and 3424(a)(2) address inspections of ropes and climbing equipment and vehicles and mobile equipment respectively, and a modification of Section 3421(h) is necessary to reference these inspection requirements in order to clarify the requirements of Section 3421(h).

Section 3421(h) is located under “General” requirements, and the Board believes that a “daily” inspection prior to use is reasonable and consistent with tree industry practices and Division compliance expectations in order to determine the condition of equipment and safety devices, other than those covered by Sections 3422(j) and 3424(a)(2). An additional modification is proposed to Section 3421(h) to require that all other equipment and safety devices be inspected for any defects prior to “daily” use.

Comment No. 7:

Confirm that the term “common,” as it modifies the terms “poisonous plants” and “harmful animals,” in Section 3421(c)(3) is limited to those plants and animals that are found in the local area in which the work is being performed.

Response:

This provision is existing language that is relocated with non-substantial minor edits only. This subsection has not caused clarity concerns in the past and was not an item that raised any comments or concerns during the two-day advisory committee. The term “common” as defined in the American Heritage Dictionary includes the following descriptions: 1) Pertaining to the community as a whole, 2) Generally known, 3) Of frequent or habitual occurrence; usual. The Board believes that the existing language, as proposed with minor edits, is suitable for the intended purpose. Therefore, the Board does not believe that modification to the proposal is necessary as a result of this comment.

Comment No. 8:

The term “climbing line” is a defined term. However, as used in this section, the term seems to be more of a category of use rather than the design strength. To clarify this ambiguity, Section 3422(f) should include the term “used in climbing” following the term “climbing rope” to eliminate this ambiguity.

Response:

The comment lacks some clarity as to the concern or issue. However, Board staff is advised by TCIA that climbing line is used in tree work operations for other purposes when it is no longer used as a climber’s line, such as the lowering of low weight loads (small limbs or branches). The proposal would prohibit ever using climbing line for any purpose other than to support the tree worker aloft as part of a fall protection system or as permitted in the exception to Section 3422(e). According to TCIA representatives, once a climbing line is used for other purposes, such as lowering loads or moving materials, it should never be used again to serve as a climber’s line. Therefore, modifications of Section 3422(f) are proposed to address this concern.

Comment No. 9:

The term “unintended” creates an ambiguous statement within Section 3422(g). This subsection states that “climbing lines shall never be left unattended.” The term “unattended” has proven to be problematic in other proposals for Title 8, such as the proposed standards related to pneumatic nailers. It is not clear if this term means merely “out of sight” or something more. For example, if the climber comes down to get a tool and leaves the rope in the tree for a few moments while he retrieves the tool, would the Division consider that “unattended?”

Response:

Section 3422(g) mirrors ANZI Z133.1-2006, Section 8.1.17. However, the Board agrees that the term “unattended” may lack clarity. Staff believes that the intent of this ANSI standard was to prevent climbing lines from being left in trees overnight and/or in situations where a tree worker was not present to ensure that the condition and security of the climbing line was not compromised by situations such as contact with animals or unauthorized persons, etc. A modification is proposed that would require climbing lines never be left in trees when there is no qualified tree worker at the job site location.

Comment No. 10:

The last sentence in the exception to Section 3427(b)(10) should have the word “both” added after the word “in.”

Response:

The proposed exception to 3427(b)(10) applies when a qualified tree worker who is competent and experienced in palm tree work and the hazards associated with removing dead fronds makes a determination that the task can be safely performed from below. The Board believes that the existing proposal is sufficiently clear without the word “both” being added to this provision. The Board does not believe that modification to the proposal is necessary as a result of this comment.

Comment No. 11:

Section 3427(b)(1) should include the word “audible” so that the section reads “verbal, audible or visual communication or pre-arranged two-way hand signals...” In addition, Section 3427(c)(4) (which Mr. Bland refers to as “(C)(3)(F)(4)”) should include the wording “audible, visual or pre-arranged two-way hand signals” following the word “verbal.”

Response:

Proposed Section 3427(b)(1) pertains to communications during pruning and tree removal operations. It is modeled after, and consistent with, the similar provision in ANSI Z133.1-2006 Section 8.4.11. The Board believes that adding “audible” warnings to this type command and response communication system does not add additional safety or clarity to the existing proposal and further modification to this provision is unnecessary.

Section 3427(c)(4) pertains to warnings that must be given in felling operations. The existing proposal already permits an “audible” warning and does not prohibit the use of “verbal” warnings. The Board believes it is unnecessary to add the word “verbal” to this subsection. However, ANSI Z133.1-2006, Section 8.5.18 addresses felling of trees and tree trunks and provides that pre-arranged, two-way hand signals may also be used as a warning method. Therefore, a modification of Section 3427(c)(4) is made that permits the use of two-way hand signals.

The Board thanks Mr. Bland and ULCC for their comments and participation in the Board’s rulemaking process.

Mr. David Shiraishi, Area Director, U.S. Department of Labor (Federal OSHA), by letter dated March 14, 2012.

Comment No. 1:

As written, the proposed standard appears not to be commensurate with the Federal standard. 29 CFR 1910.269(r)(7)(i) requires climbing ropes to have a minimum diameter of ½ inch with a minimum breaking strength of 2300 pounds. The proposed standard allows employees to use ropes with a 7/16 inch diameter.

Response:

Representatives from TCIA and other tree care companies at the advisory committee in this matter stated that the climbing line diameter alone does not necessarily correlate to the strength of the climbing line, but rather, what is important is how the line is constructed and designed. The proposed standard requires the climbing line to have a minimum tensile strength of 5,000 pounds. The federal standard requires a minimum breaking strength of only 2,300 pounds for climbing rope.

This 2,300 pound requirement is usually associated with the use of manila rope that is no longer used for climbing rope/line. Sherrill Tree Company is one of the major manufacturers of climbing rope/line. Its climbing rope charts include a wide range of selections. At least three of their rope selections designed for use as climbing line are 7/16 inch (11mm) in diameter. The average tensile strength for these types of climbing line ranges from 5,600 pounds to 8,000 pounds. The Board believes that a climbing line with design strength of 5,000 pounds exceeds the federal counterpart provision that requires less than one half of that strength. However, see the response to Comment No. 2 that discusses permitting the 7/16 inch climbing line only as an “exception” for consistency with the ANSI Z133.1 consensus standard for arboricultural operations - safety requirements.

Comment No. 2:

Federal OSHA stated a concern with the interpretation of ANSI Z133.1-2006. Paragraph 8.1.8 which indicates arborist climbing lines shall have a minimum diameter of 1/2 inch and be constructed from a synthetic fiber, with a minimum breaking strength of 5,400 pounds (24.02 kilonewtons (kN) when new). Maximum working elongation shall not exceed 7 percent at a load of 540 pounds (2.402 kN). Arborist climbing lines shall be identified by the manufacturer as suitable for tree climbing. The exception indicates that in arboricultural operations not subject to regulations that supersede Z133.1, a line of not less than 7/16 inch diameter may be used, provided the employer can demonstrate it does not create a safety hazard for the arborist, and the arborist has been instructed in its use. The strength and elongation ratings of the line selected shall meet or exceed that of ½ inch arborist climbing line. Section 3422(c) does not convey this meaning in the proposed standard.

Response:

The proposal requires a minimum tensile strength (equivalent to breaking strength) for climbing lines of 5,000 pounds instead of the 5,400 pound requirement in the ANSI Z133.1 standard for consistency with similar fall protection equipment in Title 8 standards that require fall protection lanyards and lifelines to have a minimum breaking strength of 5,000 pounds. The ANSI Z133.1-2006 standard, Section 8.1.8 permits the use of 7/16 inch diameter climbing line, but only as an “exception” as outlined in federal OSHA’s Comment No. 2.

The ANSI standard includes that 7/16 inch climbing line may be used, but it must meet the strength and elongation ratings for ½ inch diameter climbing line, and employees must be instructed in its

use. Board staff is not aware of any hazards associated with 7/16 diameter climbing line used in accordance with the manufacturer's recommendations. Therefore, in order to address federal OSHA's concern, modifications are proposed to add an "exception" to Section 3422(c) that addresses the use of 7/16 inch diameter climbing line.

The Board thanks Mr. Shiraishi and federal OSHA for their comments and participation in the Board's rulemaking process.

Ms. Barbara Materna, Ph.D., CIH, Chief, Occupational Health Branch, California Department of Public Health (CDPH), by letter dated March 15, 2012.

The Occupational Health Branch conducts selected workplace fatality investigations under the California Fatality Assessment and Control Evaluation (CA/FACE) program, funded in part by the National Institute for Occupational Safety and Health. Since 1992, they have investigated ten fatalities regarding tree work, maintenance or removal, and five of these involved a wood chipper. They produce educational fact sheets for employers and an instructional digital video as part of efforts to prevent fatalities.

CDPH supports the efforts of the Standards Board in proposing revisions to the current language in the Title 8 General Industry Safety Orders regarding this hazardous work. In general, the proposed revisions strengthen the safety regulations in many important areas that they have seen in the FACE investigations as crucial to prevention. However, they note there are four issues on which they have made recommendations in their investigations because they believe improved work practices would have made a difference:

Comment No. 1:

In two wood chipper deaths, the victim was working alone, and a safety watch could have probably prevented the incident from occurring. The New York State FACE program has also investigated a fatal case and suggested some useful language regarding a safety watch that could be considered by the Standards Board:

“When the brush chipper is in operation, at least one worker in addition to the operator shall be placed in the immediate vicinity of the work area and in close contact with the operator.”

We concur with this recommendation and suggest adding this language to the proposed standard.

Response:

In order to be effective, the additional safety watch employee at the chipper would be dedicated to observing the chipper operator and the material being prepared and put into the chipper at all times without other duties. This would essentially add an additional employee to all tree work crews using a brush chipper and altogether eliminate two-man crews, which are prevalent in many tree work operations. The economic impact upon tree work companies and their clients would be significant.

Furthermore, in order to be effective, the designated watch employee would need to be positioned in the immediate vicinity of the operator and the work area and alert at all times. Dedicated watch

positions can become boring, and if the watch employee becomes distracted or complacent, this employee could be a potential injury victim standing in the working area of the chipper which, by the nature of its operation, presents hazards where branches and limbs are being fed into the chipper. The concept is not practicable or feasible for tree work employers and, as mentioned, presents an additional employee in a hazardous working area. The Board believes that suitable and appropriate training and experience in the safe operation of chippers is the best means of avoiding hazards. Therefore, the Board does not believe that modification to the proposal is necessary as a result of this comment.

Comment No. 2:

In two cases, rope entangled in the debris pile was fed into the wood chipper. In both cases, victims were struck by the rope and died as a result. Staging the debris pile and inspecting it prior to being fed into the chipper would be a logical safety procedure that could lead to a more systematic work flow and lessen the chance that a worker would be entangled and injured by foreign objects that are in debris. The following language is recommended:

“When material is brought to the chipper for processing, it shall be placed into the staging area and inspected for removal of foreign objects prior to being fed into the chipper.”

Response:

In some tree work operations, branches and limbs may be staged in an area and then fed into the chipper. However, it is more likely that small limbs, branches and twigs may be staged in piles. In many operations, after being cut, the branch or limb is picked up only once and carried or pulled to the chipper for processing. A requirement that all material (branches and limbs) be stocked in piles and then inspected would change the work flow of many typical tree work operations. Also, some branches and limbs are quite heavy, and once lifted, it is ergonomically better to place it on the chipper feed table for processing. If it were required to be lifted, carried or dragged over to a staging pile, then in many cases, these heavier wood stock items would need to be lifted twice (once to the pile and then over to the chipper feed table). It may be problematic for the employer and the Division as to how these inspections would be conducted and documented (e.g., hundreds of limbs, branches, and tree parts enter the chipper on one jobsite).

However, from the referenced accidents in this comment, it is evident ropes that present entanglement hazards have been a factor in serious and fatal accidents. The Board notes that ropes long enough to catch or grasp the worker in any manner and at the same time are long enough to enter the chipper’s point of operation present a serious hazard to the operator. The Board believes that a modification should be added to proposed Section 3424(c)(11) that would require ropes that present entanglement hazards be prevented from entering the point of operation of the chipper. In order to meet this performance based requirement, the employer would need to instruct employees on the hazards of such ropes, provide procedures to keep such ropes away from the chipper, and provide training regarding visual inspections of branches, limbs and other parts of the tree before these items are fed into the chipper.

Comment No. 3:

This comment is related to proposed Section 3427(b)(10) regarding the removal of dead fronds. A worker died from suffocation as a result of palm fronds that fell on him from above. This worker was not trained or experienced in this operation. If a palm tree is trimmed from below, this should be done by a qualified tree worker, as the proposal states. However, language should be added that permits trimming from below only if there is less than three years' accumulation of dead fronds. This is consistent with current American National Standards Institute standards (Z133.1-2006) as well.

Response:

This issue was discussed by advisory committee, and it was evident from comments by Division representatives, as well as tree work stakeholders, that it would be nearly impossible to determine what constitutes three-years of dead frond growth below the crown of the palm. The fronds grow at different rates based on the variety of the palm, irrigation practices, soil conditions, weather and geographical location of the palm. Consequently, a provision similar to that in ANZI Z133.1 would be problematic from a clarity and enforcement perspective. However, an informational note to proposed Section 3427(b)(10) reminds the employer about the hazards associated with removing dead frond accumulations and references the ANSI standard provision. Therefore, the Board does not believe that modification to the proposal is necessary as a result of this comment.

Comment No. 4:

Many of the fatal incidents involving tree work, maintenance or removal have occurred among workers who were not adequately trained. To prevent future such incidents, tree work, maintenance or removal should be performed or supervised by an individual who has received training and certification by an organization such as the Tree Care Industry Association, or equivalent. The current proposal does not specify training by these organizations; it is our understanding that many companies already employ individuals who have gone through such training and are certified, which should become a standard in the industry.

Response:

The Board agrees that a number of tree work companies have individuals that have completed the certification programs offered by TCIA and this is encouraging. Companies that have operations in multiple states may have better means, resources and ability to participate in these certification programs. The concept is good in that training is beneficial in promoting awareness of hazards and work procedures to avoid them. However, the tree care industry has a high employee turnover rate according to stakeholders. A requirement that tree work, maintenance or removal work be performed under the supervision of an employee that has been certified by TCIA or an equivalent program is a logistical and availability problem. For example, the certification programs are limited in the number of times a year that they are offered, and this could leave many companies unable to have a sufficient number of certified employees available at all times.

Furthermore, the content of the certification programs can be broad and general in scope, and given that companies can specialize in certain types of operations, certification may not be as

effective as the employer ensuring that qualified tree workers are trained and experienced in the special hazards and unique operations specific to the individual employer's operations. The Board is also not aware of an organization that would monitor and verify the suitability and content of programs that would be considered "equivalent" to those offered by TCIA. Therefore, the Board does not believe that modification to the proposal is necessary as a result of this comment.

The Board thanks Ms. Materna and CDPH for their comments and participation in the Board's rulemaking process.

Mr. Jay A. Weir, Senior Manager, EHS Strategic Compliance, AT&T Environment Health & Safety, by letter dated March 15, 2012.

Comment:

AT&T is concerned with the proposed changes to Title 8, Article 38, Section 2950(b) minimum approach distances to energized conductors for persons other than qualified line clearance tree trimmers and trainees as specified in Table 1 of that section. The heading of Table 1 leaves out two classes of qualified persons: qualified electrical workers and qualified telecommunications workers. Both classes appear to have been placed into the "other" category (not qualified to remove limbs, branches, brush growth, etc.) within the minimum clearances specified in Table 1 of the proposal. The exception to subsection (b) should also include qualified telecommunications workers (QTWs) and qualified electrical workers (QEWs), as both may be required to do similar work during trouble outages to maintain service for our customers. AT&T ensures their employees have the proper tools and training necessary to keep them safe and on the job.

Response:

Both QTWs and QEWs are highly trained and skilled to work in proximity to high voltage energized conductors. Minimum approach distances to energized overhead power lines and parts for QTWs are provided in the Telecommunication Safety Orders, Section 8602(h) Table TC-1. Minimum approach distances to energized parts for QEWs and qualified line clearance tree trimmers are provided in the High Voltage Electrical Safety Orders, Section 2940.2. As an example, Section 2940.2 permits work for these employees as close as 2 feet, 1 inch to energized high voltage lines. During power outages and similar emergencies it may be necessary for a QTW or QEW to remove a limb, branches or other growth from areas in the vicinity of overhead power lines. Therefore, exceptions Nos. 2 and 3 to Section 2950(b) are added to the proposal with respect to QTWs and QEWs, provided they are trained and experienced in the special techniques and work procedures required to avoid the hazards of line clearance tree trimming operations.

The Board thanks Mr. Weir for his comments and participation in the Board's rulemaking process.

II. Oral Comments.

Oral comments received at the March 15, 2012, Public Hearing in Sacramento, California.

Kevin Bland, Attorney, representing the Utility Line Clearance Coalition (ULCC).

Comment:

Mr. Bland stated support for the proposal subject to minor changes and clarifications. He specified the need for clarification of the term “unattended” as used in proposed Section 3422(g). He also stated that the definition in Section 3420(b) for “secured” person lacked clarity with respect to what constitutes “unintended movement.”

Response:

See the responses to Mr. Bland’s written Comments Nos. 3 and 9. The Board thanks Mr. Bland and ULCC for their comments and participation in the Board’s rulemaking process.

Mr. Larry Pena, Manager of Corporate Safety Policy and Regulation, Southern California Edison, also speaking on behalf of Mr. Louis Renner of Pacific Gas and Electric Company.

Comment:

Mr. Pena expressed concern about the utility company’s ability to safely restore service to the general public and the issue of safety in line clearing. He expressed concern that, as written Section 2950(a), applies to “all” line clearance activities, and that the word “trouble” needs to be defined in the regulation. He asked the Board to consider adding an exception to Section 2950 that would apply to operations or conditions not specifically covered in both Article 3 and Article 36, in order to allow Qualified Electrical Workers to continue to do their work.

Response:

Board staff contacted Mr. Pena by phone in order to clarify his concerns. The reference to the word “trouble” is not used in the proposal and pertains to the word’s use in other sections of the High Voltage Electrical Safety Orders which are outside the scope of this rulemaking. Mr. Pena confirmed that his concerns with respect to a qualified electrical worker to be permitted to remove a branch or limb in power restoration/outages are the same as those expressed in the written comment from Mr. Jay Weir of AT&T. See the responses to Mr. Weir’s written comment and the resulting proposed modifications. The Board thanks Mr. Pena for his comments and participation in the Board’s rulemaking process.

Mr. Jack Kastorff, Board Member.

Comment No. 1:

Mr. Kastorff stated that the definition for “prusik loop” includes reference to a “prusik knot,” and this seems unclear, since he and others may not know what a “prusik knot” is.

Response:

The definition for “prusik loop” is verbatim of ANSI Z133.1 – 2006. The Board notes that the ANSI standard also omits a definition for “prusik knot,” likely because the prusik knot is a sliding friction knot that is familiar to tree workers and it is frequently used as an aid in ascending the tree. However, a parenthetical modification after the word “prusik knot” is added for clarity.

Comment No. 2:

Mr. Kastorff stated that the term “raveling” used in Section 3422(h) should be changed to “unraveling.”

Response:

Section 3422(h) is verbatim to the requirement in the ANSI Z 133.1 standard, Section 8.1.15 that states “rope ends shall be finished in a manner to prevent raveling.” The American Heritage Dictionary denotes that one explanation of the term “ravel” means to “unravel” and that one explanation of the term “unravel” means to “ravel.” Consequently, either term works. The Board believes that the definition should remain unchanged for consistency with the ANSI standard use of the word.

Comment No. 3:

Mr. Kastorff expressed concern with regard to the requirement for aerial rescue [addressed in proposed Section 3421(l)] and stated that relying on “911” does not provide adequate safety, because not all fire stations are capable of an aerial rescue.

Response:

Employers’ tree work operations differ greatly and range from those that focus on residential and ornamental landscaping that include smaller trees to those who specialize in aspects such as line clearance. Not all employers are involved in operations that would necessitate an aerial rescue by climbing into the tree.

Several tree work employers emphasized that aerial rescues present hazards to the rescuer, and an aerial climbing rescue is not indicated or appropriate for a number of situations. Aerial rescue requires significant training and experience on the job, and one employer noted the training can take up to 5 months before the employee is qualified to perform a climbing rescue. The advisory committee agreed, in large part, with the proposal’s requirement that training in aerial rescue procedures is to be provided for employees whose job assignments may require them to perform aerial rescues. Therefore, it is expected that employees appropriately trained to perform aerial rescue would be present on the job site that requires such rescue, thereby mitigating the need for reliance on other responding agencies such as fire departments. Therefore, the Board does not believe that modification to the proposal is required as a result of this comment.

Comment No. 4:

Mr. Kastorff expressed concern regarding the provisions in Section 3427(b)(10) that address the requirements for removal of fronds from palm trees. He was concerned about the difficulty in identifying the age of palm frond skirts and suggested leaving room for discretion in that area.

Response:

Stakeholders shared Mr. Kastorff's concerns that it would be difficult and likely not possible to accurately determine the numbers of years that dead fronds have been accumulating below the crown of the palm. Therefore, reference to the ANSI standard provision that recommends workers never remove palm frond skirts of three years or more growth from below is written as an informational "note" in the proposal. The Board does not believe that modification to the proposal is required as a result of this comment. Also see the response to Ms. Barbara Materna's written Comment No. 3.

MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM THE 15-DAY  
NOTICE OF PROPOSED MODIFICATIONS

No further modifications to the information contained in the Initial Statement of Reasons are proposed as a result of the 15-day Notice of Proposed Modifications mailed on June 28, 2012.

Summary and Response to Written Comments:

Mr. David Shiraishi, Area Director, U.S. Department of Labor (Federal OSHA), by letter dated July 16, 2012.

Comment:

Mr. Shiraishi stated that the proposed occupational safety and health standard appears to be commensurate with the federal standard.

Response:

The Board thanks Mr. Shiraishi and federal OSHA for their comments and participation in the Board's rulemaking process.

ADDITIONAL DOCUMENTS RELIED UPON

None.

DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

These standards do not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

No reasonable alternatives have been identified by the Board or have otherwise been identified and brought to its attention that would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provision of law.