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Attachment No. 2

INITIAL 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, Group 2, Article 38, Section 2950 of the  
High-Voltage Electrical Safety Orders.

Tree Work, Maintenance or RemovalSUMMARY

This rulemaking was initiated by a memorandum dated May 6, 2009, submitted to the Occupational Safety and Health Standards Board (Board) from the Division of Occupational Safety and Health (Division). The Division noted that several fatalities had occurred involving tree workers trimming palms when the palm frond skirts (dead growth under the palm canopy) had fallen on the workers suffocating them. The Division noted that some of the existing requirements related to tree work in general do not represent current safe work practices and equipment. Consequently, the Division recommended amendments to update many of the standards in the General Industry Safety Orders (GISO), Article 12, Tree Work, Maintenance or Removal.

The proposal was developed with the assistance of an advisory committee and adds a number of new definitions for clarity to existing and proposed standards. The proposal also includes, but is not limited to, provisions related to, training, first aid, work practices and procedures, electrical hazards, the use of power saws, mobile equipment, and the use of climbing equipment.

In addition, amendments are proposed for the High-Voltage Electrical Safety Orders (HVESO), Section 2950 that delineate the minimum approach distances to energized conductors for persons other than qualified line clearance tree trimmers and trainees.

This proposed rulemaking action also contains nonsubstantive, editorial, reformatting of subsections, and grammatical revisions. These nonsubstantive revisions are not all discussed in this Informative Digest. However, these proposed revisions are clearly indicated in the regulatory text in underline and strikeout format. Editorial comments and notes included in brackets throughout the proposal are not part of the final text. They are provided to assist persons reviewing the proposal to identify the origin of the proposed text where available, and to

identify provisions that have been relocated or moved within Article 12 to provide optimal formatting of the proposal.

### SPECIFIC PURPOSE AND FACTUAL BASIS OF PROPOSED ACTION

This regulatory proposal is intended to provide worker safety at places of employment in California.

#### GISO Article 12. Tree Work, Maintenance or Removal

##### Section 3420. Scope and Definitions.

###### Subsections (a) and (b)

Subsection (a) provides the scope section for Article 12 which includes work performed and equipment used in tree maintenance and removal. An amendment is proposed that is necessary to clarify that “ornamental palms” are included in the scope of the provisions. A new informational “Note 1” is proposed that states the requirements for fall protection in date palm operations and for ladders attached to date palms are provided in the GISO, Sections 3458 and 3458.1. The existing informational note is renumbered as “Note 2” with revisions necessary to clarify line clearance tree trimming operations in proximity to high voltage energized conductors is provided in the HVESO, Article 38.

###### Subsection (b) Definitions.

The proposal adds a significant number of new definitions for Article 12. The definitions were developed with the assistance of the Tree Care Industry Association (TCIA), the Division and members of the advisory committee. A number of the definitions are consistent with the American National Standards Institute (ANSI) Z133.1 consensus standards related to the safety requirements for arboricultural operations. These proposed definitions are necessary to provide clarity to existing requirements and the amendments proposed for Article 12.

##### Section 3421. General.

Existing Section 3421 contains general training and instructions required of the employer such as job briefings, inspection of equipment and safety devices, the use of vehicles and pedestrian traffic, first aid, cardiopulmonary resuscitation (CPR) and rescue procedures.

###### Subsection (a)

Minor editorial revisions are proposed in subsection (a) for clarity.

###### Subsection (c)

Existing subsection (c) requires general training in the hazards associated with employee job assignments and documentation of the training. This subsection includes amendments that state the training includes, but is not limited to, the specific provisions in new subsections (c)(1) through (c)(5). Proposed subsection (c)(1) is existing language with minor edits. Amendments to subsection (c)(2) would require the safe use of all equipment, including, but not limited to, safety equipment and personal protective equipment. Subsection (c)(3) is relocated from existing

subsection (f) with only minor edits. Subsection (c)(4) specifies training and instruction in operations that include pesticide and fertilizer applications for employers whose employees are exposed to, or engage in such operations. Subsection (c)(5) requires training in the recognition and avoidance of electrical hazards. It also refers to more detailed training and instruction requirements provided in Section 3423 for tree work performed in proximity to energized power lines and conductors. The proposed amendments in subsection (c) are necessary to address employee hazards that require training and instructions.

#### Subsection (d)

The existing provision requires the employer to certify that training has been completed prior to performing the job assignment. An amendment is proposed that acknowledges the trainee should be allowed to perform certain job assignments when there is oversight and observation of a qualified person. This amendment is necessary to allow the qualified person to monitor and observe the trainee performing job tasks in a safe manner before the employee is allowed to independently perform the task.

#### Subsection (e)

New subsection (e) is proposed to require for certain situations that refresher or additional training be provided. These provisions are consistent with similar provisions in the GISO related to the operation of equipment and machinery such as power lawn mowers and industrial trucks (forklifts). These provisions are necessary to provide further training when employees have been observed performing a job task in an unsafe manner or receive a new job assignment that includes the use of equipment, machinery, tools or safety-related work practices that the employee is unfamiliar with.

#### Subsection (f)

Existing subsection (d) is proposed as subsection (f). The existing standard requires a job briefing before each work assignment begins. An amendment would clarify the job briefing shall include the description of the hazards unique to the work assignment, the appropriate work procedures to be followed, and the appropriate personal protective equipment needed. Also, an amendment requires additional job briefings when significant changes occur in the course of work which might affect the safety of employees. These amendments are necessary to ensure that prior to the beginning of job assignments and tasks that employees are provided suitable protection and instructions for avoiding the hazards associated with their work.

#### Subsection (g)

Subsection (g) is moved from Section 3428(a)(1) with an amendment necessary for clarity that replaces the term “qualified personnel” with a defined term “qualified person.”

#### Subsections (h) through (k)

The amendments in Sections 3421(h) through (k) are primarily editorial and necessary to provide clarity to the provisions and/or optimal formatting of the standard. A proposed amendment in subsection (h) provides that inspections be performed by a “qualified tree worker” which is a defined term in Article 12. Additional revisions for proposed subsection (j) are also editorial and

rather than referencing “Article 11” the proposal references the specific sections located in Article 11 that relate to traffic control.

Subsection (l)

The existing provisions in subsection (j) are addressed in proposed subsections (l) and (m) with amendments. The existing subsection provides that the employer shall establish rescue procedures and provide training for employees in first aid, CPR and aerial rescue. An amendment is proposed to clarify that in addition to training in emergency response, training in aerial rescue procedures shall be provided for employees whose job assignments may require them to perform aerial rescues. This amendment is necessary to provide clarity to this subsection and that aerial rescue training is required for employees that may be required to perform such rescues.

Subsection (m)

Provisions related to first-aid training are provided in this subsection. The existing provisions state in part that the employer shall provide training in first aid and CPR. The existing standard can be interpreted to require that all employees on the job site must have the training. However, the standard lacks clarity as to when an employee must be trained and how many employees on a job site require the training. A proposed amendment requires for field work involving two or more persons at a work location that at least two persons trained in first aid and CPR shall be available.

An amendment states that new employees must be trained in first aid and CPR within 90 days of their hiring dates. First aid and CPR training must be performed by a certified instructor and be equal to that of the American Red Cross or the Mine Safety and Health Administration.

These amendments are necessary to provide clarity to the provisions related to first aid and CPR training and to denote when new employees must have the training.

Section 3422. Tree Worker Saddles. (Proposed as “Ropes and Tree Worker Climbing Equipment”)

Existing Section 3422 addresses tree worker saddles and requires that they be approved for their intended use. The scope of this section has been broadened to include standards for other tree worker climbing equipment including climbing ropes. Consequently, the title of this section is amended to accurately describe the provisions contained in Section 3422.

Subsection (a)

An amendment is added to the existing language proposed as subsection (a) that requires all load bearing components of a climbing system shall have a minimum tensile strength of 5,000 pounds. An exception to this requirement is proposed for equipment, such as a mechanical ascending device, provided that it is used with a secondary device that meets the minimum tensile strength requirements of this subsection. The requirement that components of a climbing system have a 5000 pound strength requirement is necessary to provide consistency with other Title 8 safety orders that prescribe the strength requirements for components of fall protection

systems. Equipment, such as ascending devices, assist the tree worker in traveling up and down the climbing line safely. Some ascending devices are not rated for 5000 pounds strength. However, they are common tree worker equipment and are always used in combination with a back up device/climbing line that does meet the minimum 5000 pound strength requirement. The exception is necessary to permit the use of these tree climbing devices.

#### Subsection (b)

This subsection requires that tree worker saddles, work positioning lanyards and climbing lines be designed by the manufacturer as suitable for tree climbing. This climbing equipment must not be altered in a manner that would compromise the integrity of the equipment. This amendment is consistent with similar provisions in the ANSI Z133.1 standards. Technical and product information from the manufacturer or their distributors is readily available from sources such as product literature, website technical and product information, or by phone contact to confirm that saddles, lanyards and climbing lines are suitable for tree climbing. This provision is necessary to ensure that the equipment is appropriate and safe for its intended use.

#### Subsection (c)

This subsection specifies the strength requirements for climbing lines, the minimum diameter of climbing lines and the maximum working elongation for climbing lines. Existing language in Section 3426(c) addresses the breaking strength (2300 pounds), material (manila rope) and minimum diameter for climbing lines (1/2 inch). Manila rope is no longer used as climbing lines. These existing provisions are outdated and proposed for deletion. The proposed amendments are necessary to provide consistency with current industry practices and criteria for the use and design of climbing lines.

#### Subsection (d)

This new subsection provides that prusik loops, split tails, and work-positioning lanyards [all defined terms in Section 3420(b)] used in a tree climbing system shall meet the minimum strength requirements for tree climbing lines. These amendments are primarily modeled from similar safety standards provided in the ANSI Z133.1 consensus standards. The amendments are necessary to ensure that equipment used that supports or positions tree workers while aloft, provides the same level of strength required of climbing lines.

#### Subsections (e) through (h)

These subsections provide requirements related to the safe use of climbing ropes and equipment used to secure the tree worker in a tree or aerial lift. These amendments are primarily modeled from similar safety standards provided in the ANSI Z133.1 consensus standards and in the case of subsection (f), the requirements are relocated from existing Section 3426(c)(3). These amendments are necessary to provide standards consistent with current industry practices and procedures.

#### Subsections (i), (j), and (k)

These subsections address the appropriate storage, transportation, inspection and/or repair of certain climbing equipment. New subsections (i) and (j) are consistent with similar ANSI Z133.1

standards, and subsection (k) is provided for equivalency with the federal standard in 29 CFR 1910.269(r)(7)(vi). These amendments are necessary to provide standards consistent with current industry practices and procedures.

Subsection (l)

Subsection (l) is relocated from existing Section 3426(d)(1) for optimal organization of the proposal.

Section 3423. Electrical Hazards, General.

The existing standard addresses work that is performed in proximity to electrical equipment and conductors. The standard states that high voltage work shall be performed in accordance with the HVESO, Article 38. However, the existing standard does not address minimum clearances required for low voltage work (600 volts or less) and does not provide for specific instruction and training requirements for employees that may be exposed to such electrical hazards.

Subsection (a)

Existing subsection (a) is limited to employees engaged in tree maintenance and removal work. An amendment is provided to clarify that the provisions of this section are applicable to tree work operations such as, but not limited to, tree trimming, maintenance and removal work in proximity to energized equipment and conductors. Subsection (a)(1) is existing language. Subsections (a)(2) through (a)(4) require specific instructions regarding the nature of electrical hazards. These instructions are similar to provisions in the ANSI Z133.1-2006 standard and are necessary to ensure all employees subject to these requirements receive adequate orientation about the hazards of electrical conductors. Language that is deleted from existing subsection (a) is revised and addressed in proposed subsections (b) and (c) for clarity.

Subsection (b)

Existing subsection (b) requires that tree work performed near high voltage conductors must be performed in accordance with Article 38 of the HVESO. The existing language is deleted in lieu of the amendments proposed in new subsections (b) and (c) discussed below, which address the requirements for tree work near low voltage conductors and high voltage line clearance work respectively.

Subsections (b)(1) – (b)(4)

Existing language in Section 3423(a) and (b), that is proposed for deletion, essentially states that employees shall not be permitted to work closer than 6 feet to electrical equipment and conductors energized in excess of 600 volts, unless they meet the requirements contained in Article 38 of the HVESO for such work. However, the federal standards in 29 CFR 1910.333(c)(3) and 29 CFR 1910.269 do not permit work in proximity to high voltage conductors within a minimum of 10 feet unless the worker is qualified as a line clearance tree trimmer. Therefore, the proposed amendments in subsections (b)(1) through (b)(4) provide the minimum clearances (for unqualified employees) from low voltage conductors that are equivalent to the federal standards and industry practices for such work.

Subsections (b)(1) – (b)(4) provide that a qualified tree worker is permitted 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, provided that the qualified tree worker is trained and competent in the areas specified in subsections (b)(1) through (b)(4). The proposed minimum clearance for low voltage tree trimming work is 1 foot in order to address federal standards in 29 CFR 1910.333(c)(3) that require qualified persons to maintain a 1 foot clearance from lower voltage type conductors energized over 300 volts to 750 volts. The provisions in subsections (b)(1) through (b)(4) are necessary to provide safe working distances from electrical hazards and to provide instruction and training related to electrical hazards that are consistent with federal standards required of a qualified employee (qualified person) for work within the scope of 29 CFR 1910.269.

#### Subsection (c)

This subsection states that line clearance tree trimming operations as defined in Section 2700 of the HVESO (related to electrical equipment and conductors in excess of 600 volts) shall be conducted in accordance with Article 38 of the HVESO. Only qualified line clearance tree trimmers or trainees as defined in Section 2700 of the HVESO are permitted to perform such line clearance tree trimming work. This subsection is provided in lieu of deleted language in existing subsection (b) for clarity and is necessary so that tree work subject to the HVESO meets the requirements of Article 38. An informational “Note” refers to the applicable HVESO sections that provide minimum approach distances and requirements for line clearance operations.

#### Subsection (d)

Proposed subsection (d) provides that metal core rope used in a climbing system shall not be used in proximity to energized electrical equipment and conductors. Metals are good electrical conductors and present hazards when used near energized conductors. The amendment is necessary to prohibit the use of metal core ropes for work in proximity to energized equipment and conductors.

#### Section 3424. Mobile Equipment.

Existing Section 3424 includes the requirements for mobile equipment such as aerial devices, and brush chippers.

#### Subsection (a) General.

##### Subsections (a)(1), (a)(2) and (a)(3)

Existing subsection (a) requires vehicles and equipment to be equipped and operated in accordance with the manufacturer’s recommendations and Title 8 safety orders. An amendment clarifies that the provisions pertain to “mobile equipment” and adds that the vehicles and equipment must also be “maintained” in accordance with the manufacturer’s recommendations. An editorial revision corrects the outdated reference to “the California Administrative Code.” Subsection (a)(2) would require daily visual inspections and operational checks. Subsection (a)(3) is relocated to this section with a minor edit for clarity.

These amendments are necessary to provide clarity regarding vehicle and mobile equipment maintenance and inspection requirements.

Subsections (a)(4) and (a)(5)

Proposed subsection (a)(4) provides that the transportation of employees and materials shall be conducted in accordance with the provisions of GISO Article 27. Article 27 pertains to safe transport and use of equipment used for employee transportation. This subsection is necessary to denote and identify the standards applicable to the transportation of employees. Subsection (a)(5) is relocated to Section 3424 from existing Section 3428(a)(7) for optimal organization of the proposal.

Subsection (b)

Existing subsection (b) provides the general requirements associated with the use of aerial devices. Several nonsubstantive editorial amendments are made in subsection (b)(1) for clarity within this standard. An amendment of subsection (b)(2)(A) is also proposed that acknowledges aerial device baskets are referred to as the “personnel” basket or “platform” depending on the type of aerial device used. The existing standard states that employees shall be “safely secured” to the tree. The term “safely secured” is deleted. Instead an amendment provides that the employees must be secured to the tree in accordance with the requirements in Sections 3422 and 3427. These sections include provisions for climbing equipment and safe work procedures. The amendments are necessary to ensure that suitable climbing equipment and work procedures are used.

Subsection (c) Brush Chippers.

Subsection (c) includes the requirements for the safe use and operation of brush chippers which are power-driven machines used for cutting wood into chips.

Subsections (c)(7) and (c)(8)

Subsections (c)(7) and (c)(8) are relocated to Section 3424 from Section 3428(a)(3) and (a)(4) for the purpose of consolidating the brush chippers requirements contained in Article 12.

Subsection (c)(9)

Proposed new subsection (c)(9) requires that climbing equipment, ropes, body belts, harnesses and lanyards not be worn while operating chippers. This provision, modeled after a similar ANSI Z133.1 standard, is necessary to prohibit the use of climbing equipment to be worn while operating machinery that could result in entanglement and being pulled into the point of operation of the chipper.

Subsection (c)(10)

Proposed subsection (c)(10) is relocated from Section 3428(a)(5) with an amendment. The amendment to the existing provision provides that, in addition to the discharge chute, the “cutter housing” shall not be opened or removed while the chipper is turning or moving. This amendment is necessary to prevent potential contact with dangerous moving parts of the brush chipper.

Subsection (c)(11)

Proposed subsection (c)(11) is relocated from Section 3428(a)(6) with an amendment. This provision requires that material such as stones, nails, and similar debris shall not be fed into the brush chipper. The amendment deletes the word “sweepings” from the existing standard and replaces it with “similar debris” because sweepings often only include smaller branches and twigs which are appropriate for shredding in the brush chipper. This amendment is necessary to add clarity and to reflect current industry practices.

Subsection (c)(12)

New proposed subsection (c)(12) requires chipper mounted winches to be used in accordance with the manufacturer’s instructions. Winches are used to assist the worker in moving larger branches or limbs up to the chipper’s point of operation. Care must be taken that the winch line is properly used in accordance with the manufacturer’s recommendations in order to avoid hazards associated with improper storage, rigging and the operation of winch line/cables that are under high tension. The amendment is to promote the proper and safe use of these devices.

Section 3425. Portable Power Hand Tools.

This section contains requirements for the safe use of power saws and requires safety devices such as a constant pressure control that will return the saw to idling speed when released.

Subsection (a)

Existing subsection (a) is titled “Gasoline Engine Power Saws.” Some saw models are now operated by rechargeable batteries and more may be expected in the future based on experience with other types of power tools. Therefore, the name of this subsection is amended to read, “Power Saws.”

Subsection (a)(1)

Proposed subsection (a)(1) is necessary to require that power saws shall be operated and maintained in accordance with the manufacturer’s instructions.

Subsection (a)(2)

Existing provisions of this subsection state that power saws weighing more than twenty pounds (service weight) that are used in trees shall be supported by a separate line, except when working from an aerial-lift device or during topping or removing operations. Amendments are proposed that change the saw weight from twenty to fifteen pounds and that permit the use of a “tool lanyard” to support the saw. An additional amendment provides that the exception to supporting the saw with a separate line/lanyard during topping or removal operations is applicable where no supporting limb is available. These amendments are modeled after the ANSI Z133.1-2000 and 2006 consensus standards and are necessary to provide consistency with industry specific standards and procedures.

Subsection (a)(5)

Proposed subsection (a)(5) is relocated with amendments from existing Section 3428(a)(8). The existing standard in part requires that saws be stopped when carried a distance greater than 100 feet. An amendment provides that chain brakes shall be engaged or the saw engine stopped when the saw is carried a distance greater than 10 feet. The amendment is necessary to mitigate the potential hazard of contact with a rotating chain during travel with the saw.

Subsection (a)(6)

Proposed subsection (a)(6) is relocated with minor editorial revisions from existing Section 3428(a)(9) that change the word “practical” to “practicable” and change the term “manufacturer’s procedures” to “manufacturer’s instructions.” The amendments are necessary to provide clarity to this provision.

Subsection (a)(7)

New proposed subsection (a)(7) provides that tree workers shall use a second point of attachment such as a work-positioning lanyard or double-crotched rope when operating a chain saw in a tree, unless the employer demonstrates that a greater hazard is posed by using a second point of attachment while operating chain saws in that particular situation. This proposed subsection is necessary to provide additional safety measures in the event the climbing line is accidentally damaged or cut by the chain saw.

Subsections (a)(8) and (a)(9)

The existing Section 3425 has a subsection (b) entitled “Backpack Units (Pruning, Clearing, Etc.)” This subsection has provisions for powered pole saws or brush saws. Stakeholders opined that the existing title of this subsection is confusing since these saws are not used as backpack units. Therefore, the reference to subsection (b) and its title are proposed for deletion to provide clarity. The existing provisions in this subsection have been renumbered as subsections (a)(8) and (a)(9) with amendments necessary to clarify that these provisions pertain to powered pole saw or brush saws.

Section 3426. Hand Tools.

This section provides general requirements for the safe use of hand tools during tree work operations. An editorial correction is proposed for existing subsection (a)(1).

Subsection (a)(2)

Proposed subsection (a)(2) requires that when climbing into a tree, tree workers shall not carry tools and equipment in their hands unless they are tools used to assist them in their climbing. It also requires that tools other than ropes or throwlines shall not be thrown into a tree, out of a tree or between workers aloft. This provision is consistent with the ANSI Z133.1 standard and is necessary to ensure safe climbing procedures and practices for the use of hand tools.

Subsections (a)(3) through (a)(5)

These subsections are relocated from existing Section 3428 in order to provide optimal formatting and organization of the proposal. Subsections (a)(3) and (a)(4) are unchanged from

the existing language. An amendment for subsection (a)(5) is proposed that differs from the existing language [Section 3428(a)(17)] and is necessary so that chopping tools are not driven as wedges or used to drive metal wedges unless they are specifically designed to be driven or to be used to drive wedges.

Subsection (a)(6)

Proposed subsection (a)(6) provides that hand tools and equipment shall be properly stored or placed in plain sight out of the immediate work area when not in use. This amendment is necessary to mitigate the potential for inadvertent contact or interference with work procedures from equipment or hand tools that are not being used.

Subsection (b)

This subsection contains standards related to pole pruners and saws. Subsection (b)(2) is relocated from existing Section 3428(a)(14) with no revisions.

Subsections (c) and (d)

The existing provisions in subsection (c) related to ropes are either deleted as outdated or are relocated to other sections in the proposal. Amendments to text that has been modified are discussed in the sections where these provisions are relocated. The existing provisions of subsection (d) relating to climbing spurs are relocated to Section 3422(l) for optimal organization of the proposal.

Section 3427. Safe Work Procedures.

Section 3427 includes a broad range of safe tree work procedures including climbing and access into trees, pruning and trimming operations and felling of trees.

Subsection (a)

Subsection (a) has several provisions that are required prior to climbing the tree to ensure a safe method of entry. An amendment adds that the tree root collar must be visually inspected. An additional amendment provides that climbing lines, ropes, lanyards, and other climbing equipment shall be inspected in accordance with the provisions of Section 3422(j) of Article 12. The amendment is necessary to ensure that climbing equipment and the tree are adequately inspected for potential hazards before the work is performed.

Subsection (a)(2)

Existing subsection (a)(2) requires the climbing line must be crotched as soon as practical after the employee is aloft and a taut line-hitch tied and checked. The existing language is deleted in lieu of proposed language that requires that employees when working aloft wear a tree worker's saddle and have at least two other means of being secured, such as a climbing line and a work positioning lanyard. Having two means of being secured allows the worker to remain secured when repositioning the climbing line. This proposed amendment is consistent with the ANSI Z133.1 standard and necessary to ensure that the tree worker has a means of fall protection at all times while aloft in the tree.

Subsections (a)(3)(A) and (B)

New subsection (a)(3)(A) requires employees to be tied in or secured while ascending the tree and remain tied in or secured until the work is completed and they have returned to the ground. This proposed subsection is similar to the ANSI Z133.1 standard. It is necessary to clarify that fall protection is required while ascending the tree and must be used until the employee returns to the ground.

Subsection (a)(3)(B) provides that employees shall not work from or leave a ladder while elevated unless the employee is tied in or otherwise secured to the tree. An exception to subsection (a)(3)(B) permits employees to work from a self-supporting ladder in accordance with the manufacturer's instructions. The amendments are necessary to require fall protection when work is performed from a ladder with the exception of self-supporting ladders that are used in accordance with the manufacturer's instructions.

Subsection (a)(4)

This subsection consists of existing language from subsection (a)(3) that is renumbered as proposed subsection (a)(4). Editorial revisions for clarity are proposed for the first two sentences of this subsection that are nonsubstantive. The third sentence duplicates the first sentence and is proposed for deletion. The last sentence is unnecessary and unenforceable and is proposed for deletion. These amendments are necessary to eliminate duplication and provide clarity to these provisions that are consistent with current industry practices.

Existing provisions in Section 3427(a)(4) and (a)(5) are deleted and the provisions of these standards are revised and covered in proposed Sections 3427(a)(2) and 3427(a)(3)(A) respectively. See the rationale under Sections 3427(a)(2) and 3427(a)(3)(A) for the necessity of these amendments.

Subsection (b)

Existing subsection (b) is titled "Pruning and Trimming." This section contains provisions for the safe removal of branches and limbs and for the protection of workers below during tree work operations. The section also describes when a second employee is required on job sites to render assistance. The title of this subsection is amended to read, "Pruning, Trimming and Tree Removal Operations" in order to accurately reflect the contents of proposed subsection (b).

Subsection (b)(1)

Existing subsection (b)(1) requires employees to be instructed to give an audible warning before cut limbs are dropped from the tree. The existing language is deleted in lieu of amendments proposed that require a verbal or visual communication system be established and reviewed during the job briefing, prior to the start of pruning or removal operations. These amendments are necessary to provide specific guidance to the employer for establishing communication methods similar to those in the ANSI Z133.1 standard.

Subsection (b)(2) and (b)(3)

New subsection (b)(2) requires the establishment of a “drop zone” [defined in Section 3420(b)] prior to the start of pruning or removal operations. New subsection (b)(3) provides that only qualified tree workers directly involved in the operation shall be permitted in the drop zone when a load is being suspended by a rigging system. These amendments are necessary to keep unnecessary personnel out of the work area and mitigating the hazards of overhead tree work operations to employees on the ground.

Subsections (b)(4) and (b)(5)

These new subsections address certain hazards associated with rigging, removing branches or sections of a tree, and tree removal operations. The proposed amendments are consistent with industry practice and are necessary to ensure that these operations are evaluated and monitored by a qualified tree worker.

Subsection (b)(6)

New subsection (b)(6) requires that lowering devices such as block and tackle and ropes be used to control the direction and placement of trees during the removal process. This amendment is necessary to ensure that the removal of limbs and trees be controlled and performed in a manner that mitigates potential hazards inherent in such operations.

Subsection (b)(7)

Existing subsection (b)(2) is proposed as subsection (b)(7). Several editorial amendments are made to the existing language. One amendment clarifies the requirement that separate ropes for lowering limbs shall be attached to limbs which cannot be dropped or are too heavy to be controlled by hand. The other amendment clarifies the requirement that climbing lines shall not be attached to the same crotch as ropes used for lowering limbs. There are no changes to existing language proposed as subsection (b)(8).

Subsection (b)(9)

Existing subsection (b)(4) is proposed as subsection (b)(9). The existing standard requires that a second employee be used at each work location to render immediate assistance, except for minor tree trimming. The existing standard lacks clarity, as the term “minor tree trimming” is not defined. Amendments are proposed that require a second employee to be present to render assistance when an employee is elevated above 12 feet in any tree work operations including climbing ladders, climbing into the tree or using an aerial device. The height of 12 feet is consistent with similar provisions in the ANSI Z133.1 standard. This amendment is necessary to provide clarity to promote the safety of workers climbing trees and/or working at substantial heights.

Subsection (b)(10)

This proposed subsection addresses the hazards associated with the removal of dead fronds that lie below the crown/canopy of palm trees. This proposed subsection would require that “palm frond skirts” [defined in Section 3420(b)] to be removed from the top down. Qualified tree

workers performing this work must be supported by a climbing line and a false crotch attached above the frond skirt, or work from an aerial device.

There are situations, depending on the variety of the palm and how the dead fronds are spaced in relation to one another, arranged and attached to the trunk, where they can be effectively removed from below. An exception states that fronds may be trimmed from below the dead frond accumulation only 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 this task can be safely performed from below. An informational note refers to the ANSI Z133.1-2006 standard regarding the hazards associated with attempting to remove frond skirts of three years or more growth when positioned below the work area while being supported by a lanyard. This amendment is necessary to mitigate the hazards of trimming dead fronds from below.

#### Subsection (b)(11)

Proposed subsection (b)(11) requires that in dry conditions, smoking is not permitted in or near dead fronds and the chain saws are equipped with mufflers and spark arresters. This provision is necessary to reduce potential fires that could be started from sources of ignition or heat.

#### Subsection (c) Felling.

Existing subsection (c) is related to the felling of trees that would typically be related to residential, municipal or commercial property tree care and must be removed for such reasons as aesthetics, poor condition of the tree, landscaping improvements and overgrowth, or deterioration of the tree with age or disease. The existing provisions include several subsections with requirements regarding establishment of a clear working area, provision of an escape route before cutting, use of notches and back cuts when felling trees over 10 inches in diameter and, use of audible warnings before the tree falls. A number of amendments that follow include more specific guidance to employers and employees involved in felling operations.

#### Subsections (c)(1) and (c)(2)

Existing subsection (c)(1) requires a clear work area and an escape route to be planned before any cutting is started. Amendments for clarity are made that divide the provisions into two subsections, (c)(1) and (2). An amendment for new subsection (c)(2) is made that is necessary to clarify that the escape route is required prior to cutting any standing tree or trunk.

#### Subsection (c)(3)

Existing subsection (c)(2) is proposed as subsection (c)(3) with amendments. The existing standard requires that a notch and backcut be used when felling trees over 10 inches in diameter. Tree industry stakeholders, including TCIA representatives, indicate that it has long been recognized that trees with a diameter of greater than 5 inches present felling hazards that are reduced by the establishment of notches and back cuts. According to TCIA representatives, a number of serious and often fatal accidents result from improper notches and back cuts.

An amendment is proposed that changes the requirement to establish a hinge (uncut wood between the notch and back cut) from a tree over 10 inches in diameter to a tree over 5 inches in

diameter. The effect of this amendment will be to address similar felling hazards presented by smaller diameter trees. This will result in better planning and control of the direction and location where trees fall during felling operations.

Proposed new subsections (c)(3)(A) through (F) provide specific requirements that specify how to create appropriate notches and back cuts for safe felling operations. These provisions are consistent with similar ANSI Z133.1 standards and are necessary to mitigate the hazards associated with felling operations.

#### Subsection (c)(4)

Existing subsection (c)(3) is proposed as subsection (c)(4). The existing provision requires that, just before the tree is ready to fall, an audible warning is given and that all personnel be safely out of range. An amendment is made to clarify that the provisions pertain to the felling of a tree or the tree trunk. In some felling operations, there may be (in addition to the sawyer) another employee assisting by driving wedges. Therefore, a clarification is proposed in subsection (c)(4) that all “non-involved” personnel in the vicinity of felling operations must be out of range before the tree falls. The amendments are necessary to clarify these standards and reflecting current industry practices.

#### Subsection (c)(5)

This new subsection requires that, prior to the start of any tree felling or removal operations, hazards and relevant factors that pertain to the tree and the surrounding site conditions be identified, including those in subsections (c)(5)(A) through (c)(5)(I). The amendments are necessary to provide the employer basic conditions and hazards that are to be evaluated for safe felling operations.

#### Subsections (d)(1), (2) and (3)

This subsection contains provisions relocated from existing Sections 3428(a)(18), (19) and (20) that are related to bucking and limbing operations. Non-substantive edits are proposed in subsections (d)(2) and (3) for clarity.

#### Subsection (e)

This new subsection consists of provisions that address “structural support systems” and “lightning protection systems.” These terms are both defined in proposed Section 3420(b). These provisions are modeled primarily from TCIA comments associated with their assistance to the Board’s advisory committee and their assistance to Virginia OSHA which has similar standards. These amendments are necessary to reduce the risks of injury associated with the installation of cabling between branches, installing rods or bracing and any other hardware or components associated with structural support systems and lightning protection systems.

#### Section 3428. Operational Rules.

The general operational rules and provisions of Section 3428 were deleted and in most cases, relocated and or updated with revisions to appropriate sections of Article 12, or they were already covered elsewhere in the proposal. These amendments are necessary to provide optimal

formatting and organization of the provisions in Article 12 and to incorporate the operating rules into the required provisions of Article 12.

High Voltage Electrical Safety Orders (HVESO)  
Article 38. Line Clearance Tree Trimming Operations

Section 2950. Application.

Subsection (a)

The existing language, proposed as subsection (a), states that Article 38 applies to line clearance tree trimming operations performed in the vicinity of exposed energized overhead conductors and equipment where any part of the employee's body, tools or equipment being used, or parts of trees being worked upon, is likely to come within the distances specified in HVESO, Section 2946(b)(2).

Section 2946(b)(2), Table 1, requires a general clearance of 6 feet from energized overhead high-voltage conductors from 600 to 50,000 volts. Clearances for low voltage work (below 600 volts) is not addressed in Section 2946(b)(2), Table 1. However, the federal standards in 29 CFR 1910.269, Appendix A-3 and its reference back to electrical standards in Subpart S, require unqualified persons to maintain a clearance of 10 feet from energized overhead conductors. An amendment is proposed for subsection (a) to delete the reference to Section 2946(b)(2), and a new Table 1 (placed within Section 2950) is referenced in subsection (a). The amendment is necessary to revise the provision for consistency with federal standards.

Subsection (b)

A new subsection (b) 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 who 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.

The new Table 1, that follows subsection (b), is proposed for equivalency with counterpart federal standards and to establish a minimum clearance of 10 feet from energized conductors for unqualified persons. An informational Note 1 is added that states the minimum approach distances to energized conductors for qualified line clearance tree trimmers and trainees as defined in Section 2700 are provided in the provisions and references of HVESO Section 2951. An editorial correction is made to proposed Note 2. The amendments proposed in subsection (b), including the addition of new Table 1, are necessary to provide the minimum clearances that must be maintained from energized conductors for persons that are not trained or qualified to perform such work.

### DOCUMENTS RELIED UPON

These documents are available for review Monday through Friday from 8:00 a.m. to 4:30 p.m. at the Standards Board Office located at 2520 Venture Oaks Way, Suite 350, Sacramento, California.

1. Memorandum from Mr. Len Welsh, Chief, Division of Occupational Safety and Health, dated May 6, 2009, to Marley Hart, Executive Officer, Occupational Safety and Health Standards Board. The memorandum has an attachment with recommended modifications to the General Industry Safety Orders, Article 12, Tree Work, Maintenance, or Removal.
2. American National Standards Institute (ANSI) Z133.1-2000 standard for Arboricultural Operations – Pruning, Repairing, Maintaining, and Removing Trees, and Cutting Brush – Safety Requirements.
3. ANSI Z133.1-2006 standard for Arboricultural Operations – Safety Requirements

### REASONABLE ALTERNATIVES THAT WOULD LESSEN ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES

No reasonable alternatives were identified by the Board and no reasonable alternatives identified by the Board or otherwise brought to its attention would lessen the impact on small businesses. The proposal was developed with the assistance of an advisory committee of stakeholders that reached consensus on the provisions contained in these proposed standards.

### SPECIFIC TECHNOLOGY OR EQUIPMENT

This proposal will not mandate the use of new, specific technologies or equipment.

### COST ESTIMATES OF PROPOSED ACTION

#### Costs or Savings to State Agencies

No costs or savings to state agencies will result as a consequence of the proposed action. State agencies that are involved in tree work operations include the California Department of Parks and Recreation, the California Department of Transportation and Cal Fire. These agencies were included in the advisory committee invitations, deliberations and/or participated in additional discussions with Board staff to verify the information provided under the heading, “Specific Technology or Equipment.” Also, see the rationale under the heading “Impact on Businesses/Significant Statewide Adverse Economic Impact Directly Affecting Businesses Including the Ability of California Businesses to Compete.”

### Impact on Housing Costs

The Board has made an initial determination that this proposal will not significantly affect housing costs.

### Economic Impact Analysis

The Board has made a determination that this proposal will not result in a significant, statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states. Representatives from the Tree Care Industry Association (TCIA) were an integral part of the development of this proposal and participated in the advisory committee. TCIA is a trade organization that represents approximately 2,100 tree service and affiliated member companies nationwide. The ANSI Z133.1 standards provided the source for a significant portion of the proposal. These ANSI standards are listed in the “Documents Relied Upon” for this proposal and reflect current industry practices and procedures.

The proposal includes clarifying and technical amendments related to tree work operations regarding such matters as instruction and training, first aid, work practices and procedures, electrical hazards, the use of power saws, hand tools, mobile equipment, and the use of climbing equipment. The advisory committee members that assisted with the development of this proposal represented a broad range of stakeholders that are involved in tree work operations.

Stakeholders confirmed that the proposed amendments, in large part, represent clarifications or updates that reflect current industry practices and/or the use of equipment and work procedures that in some cases have been included in the national consensus standards, ANSI Z133.1 – safety standards for arboricultural operations for more than a decade. As a result, it is not expected that this proposal will result in any significant costs to private or public employers.

Therefore, the adoption of the proposed amendments to these standards will neither create nor eliminate jobs in the State of California nor result in the elimination of existing businesses or create or expand businesses in the State of California.

This regulatory proposal is intended to provide worker safety at places of employment in California.

### Cost Impact on Private Persons or Businesses

The Board is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

### Costs or Savings in Federal Funding to the State

The proposal will not result in costs or savings in federal funding to the state.

### Costs or Savings to Local Agencies or School Districts Required to be Reimbursed

No costs to local agencies or school districts are required to be reimbursed. See explanation under “Determination of Mandate.”

### Other Nondiscretionary Costs or Savings Imposed on Local Agencies

This proposal does not impose nondiscretionary costs or savings on local agencies.

### DETERMINATION OF MANDATE

The Occupational Safety and Health Standards Board has determined that the proposed standards do not impose a local mandate. Therefore, reimbursement by the state is not required pursuant to Part 7 (commencing with Section 17500) of Division 4 of the Government Code because the proposed amendments will not require local agencies or school districts to incur additional costs in complying with the proposal. Furthermore, these standards do not constitute a “new program or higher level of service of an existing program within the meaning of Section 6 of Article XIII B of the California Constitution.”

The California Supreme Court has established that a “program” within the meaning of Section 6 of Article XIII B of the California Constitution is one which carries out the governmental function of providing services to the public, or which, to implement a state policy, imposes unique requirements on local governments and does not apply generally to all residents and entities in the state. (County of Los Angeles v. State of California (1987) 43 Cal.3d 46.)

These proposed standards do not require local agencies to carry out the governmental function of providing services to the public. Rather, these standards require local agencies to take certain steps to ensure the safety and health of their own employees only. Moreover, these proposed standards do not in any way require local agencies to administer the California Occupational Safety and Health program. (See City of Anaheim v. State of California (1987) 189 Cal.App.3d 1478.)

These proposed standards do not impose unique requirements on local governments. All state, local and private employers will be required to comply with the prescribed standards.

### EFFECT ON SMALL BUSINESSES

The Board has determined that the proposed amendments may affect small businesses. However, no economic impact is anticipated.

ALTERNATIVES THAT WOULD AFFECT PRIVATE PERSONS

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.

Advisory committee discussions led to the consideration of various alternatives. These discussions are fully described in the minutes included in Attachment No. 4.