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ADVISORY COMMITTEE MEETING MINUTES

Proposed Amendments for Title 8, California Code of Regulations, General Industry Safety Orders, Article 12, and the High Voltage Electrical Safety Orders, Section 2950.

Tree Work, Maintenance and Removal

May 25 & 26, 2011
Sacramento, CA

The meeting was called to order by the Chair, George Hauptman, Senior Engineer, Occupational Safety and Health Standards Board (Board) at 9:00 a.m. on Wednesday, May 25, 2011. The Chair was assisted by Bernie Osburn, Standards Board Staff Services Analyst. The Division of Occupational Safety and Health (Division) was represented by Senior Safety Engineers, Mike Donlon and Gary McIver. Marley Hart, Executive Officer for the Board, also provided introductory comments and thanked attendees for their assistance and participation. The Chair welcomed committee members and asked for self-introductions.

The Chair reviewed the Board's policies and procedures concerning the goals, objectives and use of advisory committees. The Chair explained that the committee role is to advise the Board. The Board will consider the committee recommendations, usually accepting them, sometimes modifying them and less frequently rejecting the recommendations if for example, the committee's recommendations would not be at least as effective as federal OSHA standards, or would be considered as decreasing rather than increasing the level of safety afforded by the existing standards.

The Chair acknowledged the assistance that was provided by Peter Gerstenberger, Senior Advisor for Safety, Compliance and Standards for the Tree Care Industry Association (TCIA), and David Marren, Vice President of Safety and Regulatory Affairs, Bartlett Tree Experts, whom reviewed and provided the Division with comments regarding the initial proposal prepared by the Division.

The Chair outlined the background and reasons for the proposal, noting that the Division was reviewing several fatal accidents associated with palm tree work and realized that a number of provisions in the General Industry Safety Orders (GISO) Article 12 were in need of review and potential amendment. The committee discussed and reviewed the types of injuries and accidents that typically occur in tree work activities, and the Chair passed out several documents provided by TCIA that summarized the causes of injuries and fatalities to employees involved in tree work activities. Typical causes of serious and/or fatal injuries were from electric shock or falls from trees or were associated with ladders, aerial lifts, being struck by the tree or tree limbs and the use of machinery and equipment such as chippers, and chain saws.

One committee member asked what training or qualifications an employee must have to be considered a “qualified line clearance tree trimmer”, or “tree trimmer trainee.” Division representatives read those definitions from the High Voltage Electrical Safety Orders (HVESO) and explained that it is up to each employer to verify that an employee has the training and is qualified to perform such work. David Marren and Joe Tommasi, Corporate Director of Safety, Davey Tree Expert Company, noted that the federal standard in 29 CFR 1910.269(a) specifies the type of training required for qualified employees and requires that employers certify or in other words, verify and confirm (but does not mean a credential) that the employee has the training and is qualified in accordance with 29 CFR 1910.269. Federal OSHA also has a definition for “line clearance tree trimmer” in 1910.269.

Peter Gerstenberger also clarified that the title, “certified arborist” is a credential that requires specific general training and a broad range of knowledge related to the care of trees. The credential does not necessarily mean that an arborist has extensive safety related training or that the arborist is an expert on line clearance hazards and related safety precautions. He noted that TCIA has an “Electrical Hazards Awareness Program” that seeks to meet the training required in the federal standard 1910.269, Cal OSHA standards and the ANSI Z133.1 consensus standard related provisions for electrical safety awareness. The program is geared for the tree worker that may not necessarily be a line clearance tree trimmer and seeks to provide awareness/training to the typical tree worker who in the course of residential or commercial tree trimming encounters electrical hazards from power lines running through or near trees.

The Chair explained that much of the language in the proposal is modeled from provisions and recommendations in the ANSI Z133.1-2006 standard for Arboricultural Operations – Safety Requirements. Peter Gerstenberger explained the history of the standard and stated that the first edition was published in 1972 and is revised and updated approximately every 5 years. He further explained the diverse group of stakeholders that make up the ANSI committee. It is their goal that California’s standards be consistent or harmonious with the extensive work the ANSI committee has taken in the Z133.1 standard to address the hazards encountered by tree workers.

The committee was given copies of the written comments related to the proposal provided by TCIA and IBEW Local 659. The Chair indicated the committee would address those comments and noted that Article 12 addresses the broad scope of general tree work performed in residential settings, commercial settings, parks, etc., and the broad scope of tree work activities for landscaping and ornamental purposes. The Chair noted that the HVESO, Article 38 addresses high voltage line clearance tree trimming work. A number of general provisions, such as the requirements for climbing and access into trees and other tree work activities that are not covered in the HVESO, are addressed in the proposal being considered by the committee.

The committee began review of the proposal starting with the scope of Article 12, Section 3420. The Chair stated the “ornamental palms” were added and a definition was provided in subsection (b). The Chair noted that palms grown for the production and harvesting of fruits such as dates are intended to be excluded since in a production setting, they are meticulously pruned and maintained year round by the grower’s employees and do not pose the same hazards. Date palms have their own specific standards in GISO Sections 3458 and 3458.1. Dave Anderson, Safety

Representative, Bartlett Tree Experts, added that there are home owners who plant date palms primarily for landscaping or scenery but when the dead fronds are removed, they request that any dates on the tree be kept for them. He opined that the definition was appropriate as proposed. The committee agreed to the scope section and definition of “ornamental palm” as proposed including the informational notes for Section 3420(a), numbered 1 and 2.

The Chair stated that Section 3420(b) contains new definitions and TCIA had recommended many additional definitions. Peter Gerstenberger stated that some of the new definitions recommended by TCIA are to clarify existing California standards and that some are added to address new language recommended in their comments. He felt it was appropriate to wait until the entire proposal was reviewed before reviewing the new definitions. The Chair and the committee agreed. However, the Chair stated that the terms “climbing line” and “climbing rope” are quite prevalent throughout the standards and seem to have the same meaning; so the committee should review that definition before moving on. Peter Gerstenberger confirmed that within the tree trimming industry, the two terms are used interchangeably with the term “climbing line” sometimes being more definitive. There was no objection to the Chair’s comment that the definition should be included for clarity.

The committee next discussed Section 3421 containing general requirements. There was discussion about Section 3421(b) related to adding words such as “supervision and control” to this subsection. However, some members felt that the existing standard without revisions would have more clarity. Consequently, this subsection remains unchanged. The committee discussed revisions proposed for Section 3421(c) related to training and instructions. There was discussion regarding proposed subsection (c)(4) that would require training for operations that include pesticide and fertilizer applications. Several members commented that not all tree work companies are engaged in such work. Peter Gerstenberger stated that a significant number of their TCIA members do not apply pesticide and fertilizer applications. Several members stated that if the provision is included in the proposal it should be clear that it only applies to employers engaged in such operations [see proposed subsection (c)(4)].

Section 3423(c)(5) would require training in the recognition and avoidance of electrical hazards and refers to additional training specific to work performed near power lines and conductors addressed in Section 3423. The Chair stated that electrical accidents have typically been one of the most frequent causes of serious injuries and fatalities to tree workers.

With respect to first aid and CPR training, TCIA comments recommended referencing that this training be in accordance with GISO Section 3400. Peter Gerstenberger stated that the existing language could be interpreted to mean that every person on a job site would have to be trained in first aid and CPR. Several members added that that is not practicable, given the high turnover rate in the industry that every employee would need this training by the first day on the job.

Division representatives stated that GISO Section 3400 is more general in scope and less stringent than existing Section 3421(j), now proposed as Section 3421(m), so they would be opposed to referencing Section 3400. Gary McIver, Division, added that he has always interpreted and enforced this existing requirement to mean that all employees on a job site

required first aid and CPR training. The Chair stated that this subsection lacked clear and concise language but that it could certainly be interpreted that way. He felt that some revisions for clarity were in order.

Peter Gerstenberger suggested that an option would be to reference the requirements in the federal standard 1910.269(b) "Medical Services and First Aid." In 1910.269(b)(1)(i) it states that for field work involving two or more employees at a work location, at least two trained persons in first aid and CPR be available. However, an exception is provided that only one trained person need be available if all new employees are trained in first aid and CPR within three months of their hiring dates.

The Chair asked how various companies address first aid and CPR training. Several companies indicated that in time, all employees are trained. With new hires it is difficult to have them trained immediately. Dave Anderson stated that Bartlett Tree Experts trained all crew personnel in first aid and CPR, and for new hires, there may be a short period of time until they are trained but on a three-person crew, at least two would be trained. He felt that with crews of two persons or more that at least two persons should be trained for appropriate response.

Gary McIver stated he sees the potential problem employers face with new hires and a specified time period to complete the training could be a consideration. Benjamin Kent, Up A Tree Arborist Company, stated that there is a high turnover rate for new hires and a probationary period. However, it is not cost effective to certify an employee for first aid immediately on hire and then have to let them go after several days or weeks on the job. Joseph Tommasi added that the federal language pertains to high voltage type work in 29 CFR 1910.269 but it has also worked well in the residential and landscape tree work activities as a training policy.

Mike Donlon stated that the federal standard requires two persons trained and up to 3 months to train new hires. However, one concern is that the federal exception for the new person is that on a two-man crew, if one person was new and untrained and the employee trained in first aid and CPR was the one hurt, then the new person would not have the training to address first aid or CPR if needed. Carl Lamers, Business Representative, IBEW Local 1245, stated that many of the crews under their jurisdiction are two-man crews. If the employee hurt is the one that is trained in first aid and the other employee is not trained, then he felt there is a problem and agreed with Mr. Donlon's concerns. Joe Tommasi noted that the intent of the federal standard is to provide two persons that are trained but at the same time provide some means or relief to address the training for new hires.

Dave Marren felt that 2 persons trained with some provision for new hires would be adequate, keeping in mind that employees need to have training that allows them to take care of one another in a first aid situation. The Division representatives stated that they have enforced the existing standard to require all tree work employees to be trained. However, Mike Donlon stated that two employees trained on a job site with a provision for new hires would be suitable. The Chair stated that members have raised good points on various scenarios. However, he also had concerns about a two-man crew where one new employee may not be trained and unable to care for a co-worker given that the Division under existing standards would expect all employees to

be trained. Louis Renner, PG& E, stated that the accidents show a large number of serious and fatal injuries and if we have two-man crews where one person is not trained in first aid, it would be difficult to reduce those injury numbers. He felt having employees trained as soon as possible and by the first day is the best case scenario.

Mike Reynolds, Safety Supervisor, Asplundh Tree Expert Company, stated that they have some two-man crews where the second person, relatively new to the company, may not be trained until some point in a 30 to 90 day window depending on the union contract. Ernie Lopez, Business Representative, IBEW Local 47, stated that the current California standard has been working and considering adoption of the federal standard verbatim may be taking a step backwards. John Strobel, Tree Work Supervisor for Cal Trans, stated that Cal Trans has larger crews and rarely would have even a two-man crew; so they generally would comply with two persons trained on jobsites.

Mike Donlon recommended the following language:

“The employer shall provide training in first-aid and cardiopulmonary resuscitation (CPR). For field work involving two or more employees at a work location at least two trained persons shall be available. All new employees shall be trained in first aid and CPR within 3 months of their hiring dates. First-aid and CPR training shall be performed by a certified instructor.”

Language was also considered that would clarify that the first aid and CPR training must be equal to that of the Red Cross or the Mine, Safety and Health Administration (MSHA). [See proposed Section 3421(m)]

The committee in large part felt that this language was acceptable. The Chair felt it was clearer and provided more guidance than the existing standard. The Chair noted that the proposed language does not mandate that two persons be on every job site because it is applicable to field work involving two or more employees. There are situations in residential and landscaping services for example, where for minor tree trimming or pruning that only one person may be on the job site.

Mike Donlon also noted that the existing standard in Section 3421(j), proposed as 3421(l), covers two separate topics and addresses the establishment of rescue procedures including aerial rescue in the same subsection that covers first aid and CPR training. He suggested that emergency rescue procedures be addressed in a separate subsection. The committee discussed that aerial rescue involves significant training and experience on the job. Mike Reynolds stated that it could take from 3 to 5 months before someone could perform an aerial rescue associated with climbing up a tree for rescue. In a number of situations, even the trained employee should not perform an aerial rescue because it is not safe to do.

Sam Noonan, Noonan Tree Care, stated that in their aerial rescue training, they have one employee who is strictly a ground employee. That employee, who is trained with the other employees but not qualified to go up the tree to make rescues, is to call 911 or other emergency

medical services. Mr. Noonan stated that, in many situations, the tree worker should not perform an aerial rescue, as when the condition of the victim is unknown or there may be such hazards as power lines. What seems important is that the employee providing assistance knows the emergency procedures for getting help to the victim. Another member indicated that physical rescue does not always mean climbing into the tree. With the right system and conditions, a victim can be lowered from the ground. Several members discussed that an aerial rescue that involves climbing into the tree is always a challenge. It is indicated in some situations, but there are also factors that would make it unsafe for the rescuer.

The Division felt it problematic to try to specify the number of employees on the ground that would require aerial rescue training. Mike Donlon stated the existing language would require employers to establish rescue procedures unique for their operations and potential hazards. Benjamin Kent felt strongly that a ground person with the ability to climb up the tree and perform an aerial rescue should always be present on a job site. However, several other members stated that an aerial climbing rescue may not be indicated or appropriate for a number of situations. Employer's operations differ greatly from line clearance work to residential and landscaping, and the committee in large part, with some exceptions, felt it best to retain similar language to the existing provision as a performance based standard.

It was discussed that Cal/OHSA standards are minimum requirements, and as a performance standard, nothing prevents the employer from establishing more stringent or specific procedures addressing rescue operations in accordance with their tree work operations and the associated hazards. The committee also agreed to propose rescue procedures as a separate subsection [See proposed Section 3421(l)].

Bill Owen, Safety Director, Arborwell (East Bay Region), stated that the existing standard allows the employer to provide appropriate training and rescue procedures for the skill level of the worker. A grounds person can and should take initial orientation training involved for rescue operations, but the instructions may be that he is not to become a second victim by attempting an aerial rescue that the employee is not qualified to perform. However, the employer should also document and ensure that this employee understands the appropriate procedures for contacting emergency assistance to be compliant with the standard. The Division concurred with Mr. Owens's interpretation.

The committee reviewed Section 3421(d) which refers to training documentation. Peter Gerstenberger recommended an amendment for clarity that would permit on the job training because the language as proposed states the training must be completed prior to performing job assignments. Joe Tommasi added that the concern is that the language may prohibit a crew leader or supervisor from showing an employee during the training process how to operate machinery and equipment such as a chipper. Eventually the committee agreed on language reflected in attached proposal.

The Chair stated that, notwithstanding GISO Section 3203 requirements, he felt that

subsection (e) addressing refresher training was necessary for equivalency with the federal standards in 29 CFR 1910.269(a) that require additional retraining under certain situations. There were no revisions for this section to the proposal.

The committee agreed to the language related to job briefings proposed for Section 3421(f). Additional language was added to address similar federal language in 29 CFR 1910.269(c)(1). The rest of the provisions in Section 3421 were retained as proposed, and the committee had previously reviewed revisions to subsections (l) and (m) related to rescue procedures and first aid.

Section 3422 was reviewed next with a title change for the heading of this section to read, "Ropes and Tree Worker Climbing Equipment." IBEW Local 659 written comments suggested that Section 3422(a) should read that equipment used in climbing and rigging operations should have a breaking strength of at least 5,000 pounds. However, several members felt this could be problematic as some rigging operations, for example, in tree removal may need to exceed that figure. The committee agreed to retain the existing first sentence in subsection (a) that tree worker saddles must be approved since the only consensus standard addressing criteria for tree worker saddles, ANSI A 10.14-1991, is a discontinued standard. Dave Marren stated that certain gear in a climbing system like an ascender may not have the 5,000 pound breaking strength; so wording in the second sentence of subsection (a) may need revisions.

Benjamin Kent agreed stating that the ascender would be backed up by the use of a cord that meets the 5,000 pounds, but the ascender itself may not. Peter Gerstenberger recommended a solution that all load bearing components of the climbing system should have the 5,000 pound strength requirement, or be backed up by a device or component meeting the 5,000 pound requirement [see proposed Section 3422(a)]. With respect to Section 3422(b), the committee agreed to delete proposed language that would require labels or marking for climbing equipment. Labeling especially on ropes and lines would not be feasible. However, information from the manufacturer is readily available that identifies ropes as suitable for climbing lines. The committee agreed to language for subsection (b) which is similar to the ANSI Z133.1 standard.

The committee discussed proposed Section 3422(c) for climbing lines (climbing ropes). The Chairman stated that these provisions should be consistent with the ANSI standard. Peter Gerstenberger noted that TCIA comments had defined the strength and minimum diameter for climbing lines, noting that for the diameter of lines/ropes that 7/16 inch is acceptable when the minimum strength requirements are met. Joe Tommasi added that the ANSI Z133.1 standard first permitted the 7/16 inch diameter climbing line in the 2006 edition.

The Chair noted that the existing standard in Section 3426(c) requires ropes to be ½ inch in diameter, and in one rope manufacturer's charts, some ropes are less than ½ inch. Dave Marren added that line diameter alone does not necessarily correlate to the strength, but rather, how the line is constructed is a factor. The committee agreed to a 7/16 inch minimum diameter for the climbing lines consistent with the ANSI standard. The committee also agreed to retain the equivalent reference in pounds to kilonewtons (kN), as some devices such as ascenders are rated in kN. One member pointed out that an elongation factor of no more than 7 percent is intended

to prevent lines from stretching so far that the tree worker could hit an object below and that it is based on 500 pounds, which is a safety factor of 10 to 1. [See proposed Section 3422(c)]. This concluded the meeting on the first day.

May 26, 2011, start of day 2.

The Chair opened the meeting on the second day and the committee continued reviewing Section 3422(d) and agreed to the language in the proposal. With respect to subsection (e), an IBEW Local 659 written comment said that only non-powered tools should be allowed to be raised and lowered by a climbing line. However, the committee stated that this is a common method for raising and lowering tools such as, but no larger than, chain saws; so the language remains as proposed.

The committee discussed the federal standard in 1910.269(r)(7)(iv) which requires rope to be stored suspended so that air can circulate through it. It was discussed that this is likely an outdated standard intended for manila rope which is not used in current operations, and therefore, this standard is omitted from this proposal. Also, the federal provision in 1910.269(r)(7)(vii) prohibits the use of wet rope that reduces insulating capacity for work near exposed energized lines. It was discussed that climbing rope/lines typically are not insulated to provide protection from energized conductors. Furthermore, this provision is likely most applicable to manila type rope that is no longer in use. Also, Ralph Armstrong reminded the committee that the federal standard pertains primarily to high voltage work and that the clearances from energized lines must also be maintained in accordance with California's HVESO Article 38. It was decided that the HVESO already address the use of insulated equipment or tools.

The committee next reviewed Section 3423, "Electrical Hazards". The Chair felt it is necessary to add instructional provisions in subsection (a) that are modeled in part on the federal standard in 1910.268(q) and on the Z133.1-2006 standard, Section 4.1. 3. Mike Donlon stated that the items in Section 3423(a)(1) – (4) were appropriate for any tree worker, as many of the electrical accidents have been to the tree worker that was not aware of the surrounding hazards.

The Chair had several concerns when comparing California standards for work near power lines and conductors with the counterpart federal standards. The concerns were primarily associated with tree trimming activities near low voltage lines in proposed Section 3423(b). The federal standards, (e.g. 1910.269, Appendix A-3, and its reference back to Subpart S, electrical standards), could be interpreted to mean that only qualified line clearance tree trimmers or trainees could trim trees or shrubs within 10 feet of low voltage power lines and conductors.

Joe Tommasi stated his understanding that if a qualified tree worker is trained in similar areas to that required of a "qualified employee" (qualified person) in the federal standard 1910.269, the trained worker should be able to work (per federal standards) within 10 feet of low voltage lines/conductors. Otherwise, it would be very onerous for a residential tree trimming company to comply. Other members added that it would eliminate a significant amount of their business related to this type of work. The IBEW Local 47 representatives also confirmed that the utilities

and/or their line clearance subcontractors do not perform tree trimming work for residential or typical commercial building service drop lines from poles. Low voltage exposure work is typically done by trained qualified tree workers.

Dave Anderson added that residential tree work companies are not precluded from providing the type of training that a line clearance employee would receive. Ben Kent stated that if the utility is given enough lead time of several weeks, they have been able in many cases to drop lines to permit the tree trimming work. He also stated that about 25 percent of his company's work would be near low voltage service drop lines. He felt with appropriate training and a good safety program that the work around low voltage lines could be safely completed. One member commented that the typical voltages for a residential service drop would be 120/240 volts and for a commercial building, 480 to 600 volts.

The committee spent a considerable time discussing the various qualifications necessary to perform work near low voltage lines and how much experience and/or training is necessary to be considered qualified to trim trees and branches in the vicinity of low voltage lines. Dave Anderson felt it would be problematic to require all residential tree trimming within 10 feet of low voltage lines to be performed by, or under the supervision of, a line clearance tree trimmer. Typical residential tree trimming companies would not have line clearance trained and experienced personnel. Louis Renner suggested that we need to know how federal OSHA is addressing the issue of allowable approach distances to low voltage electrical lines/conductors in tree work operations. There may be compliance directives or other interpretations clarifying the issue for federal jurisdiction. He stated when we know that information, we can propose language consistent with federal OSHA's provisions and the manner in which they are enforced.

Ralph Armstrong stated that he would contact federal OSHA regarding this issue. The Chair indicated that he would like to form a subcommittee (small working group) to address the electrical issues raised today and that would allow us to proceed with the remainder of the day's agenda and proposal. Therefore, the committee agreed to postpone reviewing the remainder of Section 3423 until the subcommittee had met. This working group met on Monday, July 18, 2011 and the summary of that meeting is included at the end of these two-day minutes, starting on page 16.

The committee began review of Section 3424 "Mobile Equipment" and agreed to the language in subsection (a)(1) through (5) as shown in the attached proposal. In Section 3424(b)(2)(A), the committee discussed whether the reference to the term "basket" sufficiently described the various platforms for lifting personnel with an aerial device. Note that this subsection uses the term "personnel basket or platform" to address this. With respect to subsection (c) "Brush Chippers" there were no concerns or comments related to subsections (c)(1) through (c)(8). Subsection (c)(9) was added to the proposal subsequent to the advisory committee meeting in order to address the potential for entanglement hazards. The committee also discussed that the use of gloves with chippers can be a hazard. However, the GISO hand protection standard already covers the use of gloves in these situations according to the Division.

In subsection (c)(10), Peter Gerstenberger noted that comments from TCIA would better address specific hazards identified with the use of chippers. The committee agreed with the recommended proposed language in subsection (c)(10). The committee also discussed hazards associated with the use of chippers that have mounted winches when the winch line is not properly stored during chipper operations. The committee agreed to performance based language that chipper mounted winches shall be used in accordance with the manufacturer's instructions. The committee also agreed that it was unnecessary to include a cross-reference to the GISO Crane Safety Orders since these standards already apply to the provisions in Article 12 unless stated otherwise.

The committee discussed the title of Section 3425 "Gasoline Power Saws." There was a consensus to change the title to "Power Saws" since battery type saws are already available on a limited basis. Peter Gerstenberger pointed out that subsection (a)(5) states that saw engines must be stopped when carrying them for a distance greater than 100 feet. Mike Donlon stated that this existing provision likely originated from the logging standards. Mr. Gerstenberger stated this is quite different from the Z133.1 standard, rule 6.3.11 which requires the chain saw brake to be engaged when the saw is carried more than two steps. It was discussed that the intent of the provision is to mitigate accidents caused when the operator trips and/or falls with a running saw blade.

John Strobel, Cal Trans, stated that setting the brake or turning the saw off every two steps when bucking a lengthy log would be not be practical when the saw operator is in a work zone. He agreed that, when carrying a saw outside a work zone, it should be turned off. Bill Owen stated that setting the chain brake can be done with both hands remaining on the saw, and the brake can be disengaged from the top handle of the saw. It was stated that all modern saws have a chain brake.

John Strobel added that Cal Trans will buck brush down miles of road, and if the saw brake has to be set every two steps, it would be quite limiting and difficult to enforce with his crew. Mike Donlon stated that the first sentence of subsection (a)(5) should still require that the saw be stopped when carrying it for distances over 100 feet, but that the second sentence should address setting the saw brake for reasonable shorter distances [see proposed subsection (a)(5)]. The committee including Mr. Strobel agreed that a distance of 10 feet for setting the chain break would be reasonable and consistent with another provision that requires no one except the operator to be within 10 feet of the cutting head of a brush saw.

In subsection (a)(6), the word "engine" was replaced with the word "saw" for consistency with the title of Section 3425. In subsection (a)(7), it was discussed and agreed that prohibiting the use of "any sharp tool" without a second point of attachment in a tree would be too onerous and not practicable. Consequently, the provisions in subsection (a)(7) apply to the use of a chain saw while in a tree.

The committee next discussed Section 3425(b). The existing title of this subsection referred to "Backpack Power Units (Pruning, Clearing, Etc.)." The Chair questioned what equipment would be considered backpack power units. Peter Gerstenberger indicated that the leaf blower is the

common example. The Chair noted that the original draft proposal included the addition of powered pole saws in the title of subsection (b). The committee felt that subsection (b)'s reference to backpack power units was confusing when used in the same subsection that addressed pole saws and brush saws. The committee discussed whether subsection (b) should refer to pole saws and brush saws. One member clarified that a powered pole saw has a powered saw on the end of a pole/stick, and the brush saw is like a weed eater, only with a blade. Note that the Chair made some numerical formatting and minor revisions to these standards for clarity subsequent to the meeting.

The committee reviewed Section 3426 "Hand Tools." Based on a written comment from IBEW Local 659, the committee agreed that subsections (a)(2) and (4) were redundant and therefore, proposed subsection (a)(4) [existing section 3428(a)(13)] was deleted. No additional revisions were made to the remainder of subsections (a) and (b). The existing provisions related to the design and strength of ropes in Section 3426(c)(1) were revised with the assistance of the committee and relocated to Section 3427(a)(2) and (3). The remainder of Section 3426 regarding the use of ropes and climbing spurs was relocated to Section 3422.

The committee began review of Section 3427 "Safe Work Procedures." The committee agreed to subsection (a)(1) as proposed. Peter Gerstenberger stated that proposed subsection (a)(2) requires the tree worker to have available at least two means of being secured such as a climbing line and work positioning lanyard. He proposed language from the next 2011 edition of Z133.1 that would clarify that the two means shall be used when an arborist determines it is advantageous. The Division and Chair felt that while this language is clarifying, it would likely be difficult to enforce, and therefore, the language as originally proposed was retained.

The Chair read proposed subsection (a)(3)(A) which states the following: "Employees shall remain 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." The Chair stated that he understood this to mean a 100 percent fall protection (tied in or secured policy) whenever an employee is aloft. Peter Gerstenberger said this has been the industry practice and has been in the ANSI Z133.1 standard for approximately 10 years. There are exceptions in the Z133.1 standard fall protection provisions while ascending a ladder to gain access to the tree. Various members confirmed that it is industry practice to be tied off while in the tree at any height. Mike Donlon asked as an example, if an employee climbed up just 4 feet from the ground to cut a couple of branches, would it be feasible and industry practice to wear fall protection. Bill Owen responded that if a tree worker fell from 4 feet, depending on how he or she landed, a significant accident could occur. The consensus was that employee could and should be secured at all times while climbing and working in trees. [See proposed subsection (a)(3)(A)].

The Chair stated that he had a concern about tree trimming operations in agricultural settings with orchard ladders. The Chair stated that since tree trimming is not addressed in agricultural standards, the applicable provisions of GISO Article 12 would likely apply. The Chair's concern was that a great deal of work in orchards, including pruning and thinning, is done from orchard ladders, and the current language in subsection (a)(3)(B) would prohibit working on these ladders. Dave Anderson suggested that an exception may be necessary for self-supporting

ladders. Another member concurred, stating that there are some trees that are quite small and if the tree or its limbs would not support the weight of the worker then a self supporting ladder could be used. Dave Anderson also explained that proposed subsection (a)(3)(B) means that, when a tree worker is ascending the tree by an extension ladder, the worker must be tied in before performing work or leaving the ladder into the tree.

There was some confusion as to the clarity of proposed subsection (a)(3)(B) and its “Note” that was modeled from concepts in Z133.1-2006, Section 8.1.20. The committee finally reached consensus with the language similar to that of the attached proposal of this subsection.

One member stated that the existing language in Section 3427(a)(4) is outdated, in that it requires that a climbing rope must be passed around the main leader of the tree or a major upright branch. It was stated that when using a single line system one may not be passing the rope around the tree but using a block system that is secured in place, or a false crotch system can be can also be used. John Strobel stated that this provision is talking about the tie-in point, and Dave Anderson suggested modifying the subsection in accordance with that concept as shown in the attached proposal. The committee also agreed that the last two sentences of this subsection were duplicative and/or unnecessary.

Review of Section 3427(b) “Pruning and Trimming” was next. This title is modified to read “Pruning, Trimming, and Tree Removal Operations” for clarity. Several provisions were relocated and added into subsection (b) so the references to specific subsections that follow reflect the content in the attached proposal. The committee agreed with revisions pertaining to verbal and/or visual communications as shown in Section 3427(b)(1). There were no revisions to subsections (b)(2) through (b)(6), and subsection (b)(7) was revised in accordance with the committee discussions. Subsection (b)(8) is existing language that was not changed.

The committee had concerns about existing language, proposed as subsection (b)(9), which requires a second person on a job site involving tree maintenance or removal, except for “minor tree trimming.” Several members discussed whether the term “minor tree trimming” was vague and not enforceable, and the committee agreed revisions were necessary. The Chair noted that the High-Voltage Electrical Safety Orders, Section 2951, Line Clearance Operations, requires a second employee to provide assistance during all tree trimming operations. However, the issue for GISO Article 12 is to clarify when a second person should be on the job site. Benjamin Kent stated that there are times when only one employee is on a job site for such activities as pruning from the ground or stump grinding. There were a number of scenarios discussed that may warrant a second employee on site.

Peter Gerstenberger stated that the Z133.1 standard in section 8.1.2 requires a second employee trained in emergency response for arboricultural operations performed above 12 feet. The origin for the 12 foot distance was not readily known, although Dave Anderson stated that distance allows you to clear or trim growth up to a one story roof. The Chair asked if the 12 feet distance is measured from the ground to the tree climber’s feet. Mike Donlon stated that, with respect to numerous Cal/OSHA fall protection trigger heights, the Division uses the location of the employee’s feet from the ground. The committee discussed if the 12 foot trigger height pertains

to all operations, such as work from an aerial device or ladder. Peter Gerstenberger stated that the ANSI standard uses the term “arboricultural operations” which in the scope of the standard includes any tree work operations, such as pruning, maintaining or removal, including work from the bucket of an aerial device or anytime the employee is in an elevated position greater than 12 feet. The committee consensus was to include language similar to proposed subsection (b)(9).

The Chair stated that Section 3427(b)(10) addresses the hazards associated with removing dead palm fronds that have three or more years of growth (referred as the palm skirt). The Division advised that there have been several fatalities when these palms are trimmed from below the frond skirt, and the employee is using a lanyard around the palm trunk. If the entire skirt releases and falls onto the employee it pins the victim against the palm trunk. Peter Gerstenberger stated that he drafted a definition of “palm frond skirt” for clarification [see Section 3420(b)]. The Chair noted that proposed subsection (b)(10) is modeled after Z133.1-2006, Section 8.2.7., which requires palm frond skirts that have three years or more of growth to be removed from the top down.

It was discussed that the preferred method for pruning these palms is with an aerial device. However, John Strobel added that with some backyard palms that is not always possible. Committee members discussed the various challenges and difficulties associated with some palm work, such as tight quarters, dealing with the dead frond skirts, power lines and working at great heights.

One concern related to the wording of the Z133.1 standard and the committee’s draft proposal was how one would determine 3 years growth of dead fronds given the various types of palm species. John Strobel stated fan palms have shorter fronds which tend to clump up together, and they can be one of the more hazardous species regarding the skirt releasing or breaking free. Palms with longer fronds present less hazard and will often lose the dead fronds individually rather than clumping together. However, there are palms with longer fronds that accumulate a palm skirt that can be a hazard when trimmed from below. The committee agreed that it is problematic from a clarity perspective for the employer and the Division to determine three years growth. The accumulation of dead fronds can vary for specific palms depending on factors such as growing conditions.

Gary McIver said from the Division’s perspective it will be nearly impossible to prove that a palm has three years of growth and that we should consider permitting a person qualified to make the decision as to the method necessary to remove dead fronds safely. The committee also discussed establishing a measureable distance in feet for the accumulation of dead fronds that would prohibit trimming from below. However, this seemed problematic depending on the species and condition of the tree. John Strobel mentioned that he has trimmed numerous palms from below when determined that it can be safely achieved, and it is a fast and efficient method. Dave Anderson stated, for palms that are maintained and trimmed on an annual or bi-annual basis, palm skirts are not an issue. It is the palm with years and years of growth that has not been maintained that presents the hazard.

The Chair stated that with all the factors that must be evaluated to trim palms safely that he agreed with Gary McIver's comment that a performance based standard should be considered that would require a qualified tree worker, experienced in the hazards associated with palm work to make an evaluation and determination as to the method and equipment are used to remove dead fronds. The Chair indicated that he would draft language to that effect and that members could review it subsequent to the meeting. [See proposed Section 3427(b)(10)].

The committee next discussed Section 3427(c) "Felling." Peter Gerstenberger stated that one of the most important procedures in felling is controlling the direction the tree falls by the use of appropriate notches and back cuts. He stated that this could be more specifically addressed in GISO Article 12 provisions. TCIA recommended a definition for "felling" modeled from a proposed definition for the next edition of the Z133.1-2011 standard. Felling means cutting down an entire tree or standing section of a tree in one piece, from the ground by the incorporation of a notch and back cut. Felling is different than tree removal in sections or using the assistance of a crane. Felling is achieved from the base of the tree using a face cut/notch, back cut and hinge to make the tree fall exactly where you want it to go.

The committee discussed the need to clarify the type of cuts necessary to safely fell a tree. The committee briefly discussed some provisions in the Logging and Sawmill Safety Orders (e.g. Section 6279) that address felling cuts but felt that language was not current. Peter Gerstenberger discussed several different cuts/notches and methods used for felling trees. Revisions suggested by TCIA for subsection (c)(3) are intended to address that with appropriate notching, backcuts and a hinge when necessary that the tree falls in the intended or planned direction. The committee agreed to Section 3427(c)(1) and (2) as shown in the attached proposal.

In subsection (c)(3) Peter Gerstenberger noted that, along with revisions that give more direction than the existing standard, the terms "notch", "back cut", and "hinge" are provided definitions consistent with Z133.1 (noting that "hinge" is a new definition from the proposed 2011 standard). One member stated that creating a "hinge" with proper notching and back cuts for larger trees is one of the key components for controlling the direction of a tree fall. The existing standard in subsection (c)(3) requires that a notch and back cut be used in felling trees over 10 inches in diameter.

TCIA and other committee members stated that it has long been recognized in the Z133.1 standard that trees over 5 inches in diameter measured at breast height (approximately 4 ½ feet above the ground) should require a notch and back cut to establish a hinge when felling the tree. The term "diameter at breast height" is a well-known and conventional industry term used. The committee noted that trees with a trunk diameter greater than 5 inches pose a serious hazard when cut without notching. Proposed subsection (c)(3) reflects the committee consensus.

The committee discussed that during some felling operations, there may be (in addition to the sawyer) another employee assisting by driving wedges. Therefore, a clarification was added to subsection (c)(4) that all "non-involved" personnel in the vicinity of felling operations must be out of range before the tree falls. Subsection (c)(5) is discussed several paragraphs below after

the discussion related to cabling support systems. There were no revisions regarding existing provisions related to bucking operations that are relocated into new subsection (d).

Proposed Section 3427(e) “Cabling, Support Systems and Lightning Protection Systems” was reviewed. The Chair noted that these provisions were in part modeled from TCIA comments regarding their assistance to Virginia OSHA with similar standards. This subsection is proposed at the end of Section 3427 for clarity and optimal formatting. The Chair asked if lightning protection systems are necessary for California. Several members confirmed that there are areas where they are installed and necessary in California trees. Several members explained that the lightning protection system is a grounding system consisting of various hardware components that are permanently installed in the tree to protect it from lightning hits. The concept is similar to lightning rods installed on buildings. Mike Donlon asked if the “cabling and support systems” are associated with lightning systems. John Strobel stated they are different systems and that cabling is used to support limbs that otherwise should be removed, but the tree has value and keeping them maintains the tree shape.

The Chair asked if “cabling” is the same as a “support system.” John Strobel stated that cabling is a support system. Peter Gerstenberger added that one could include cabling as part of a “structural support system.” Components of a structural support system could be a cable between branches, a rod or brace, or other hardware used to keep the tree structurally solid. The committee agreed that the title of this subsection should be “Structural Support Systems and Lightning Protection Systems.” Board staff also incorporated TCIA suggested revisions of subsections (e)(1) and (e)(2) and added the recommended definition of “structural support system” in Section 3420(b).

The Chair stated, that because rigging is part of some tree pruning and/or removal operations and tree removal and rigging related provisions are already located in Section 3427(b), he would consolidate those activities located elsewhere in the proposal into Section 3427(b). Peter Gerstenberger and John Strobel noted that the items listed in the committee’s draft proposal for Section 3427(e)(1)(A) through (I) pertain more to felling operations. In the attached proposal these items have been relocated to the felling provisions under Section 3427(c)(5)(A) through (I).

The provisions of existing Section 3428 “Operational Rules” were deleted and relocated to other appropriate sections of the proposal, or they were already addressed elsewhere in the proposal.

The Chair asked if any of the amendments in the proposal would have a significant cost impact either in requiring new equipment or procedural changes. Peter Gerstenberger stated that the amendments we have discussed are items that have already been in the ANSI Z133.1 standard for at least five years and are likely already industry practice. Mike Reynolds added that, depending on how specific the requirements are for the removal of dead palm fronds or palm frond skirts, it may require some procedural changes. The Chair responded that, based on the committee discussions, that issue would likely be addressed by a performance based standard, so he did not expect it would impose significant costs.

The Chair noted that, while the committee did not have time to review the definitions recommended for addition to Section 3420(b), it was his intent to add the majority of definitions recommended by TCIA in its written comments.

The Chair indicated that the subcommittee would meet in July to consider the issues related to Section 3423 “Electrical Hazards” to resolve the concerns that relate to tree trimming near low voltage power lines and conductors. This meeting is summarized on the following pages.

This concluded the May 26, 27, 2011 committee deliberations and there being no further questions, the Chair thanked the committee members and those who submitted comments and adjourned the meeting.

Subcommittee meeting held on Monday, July 18, 2011

The subcommittee consisted of the following members:

Dave Anderson, Bartlett Tree Experts
Ralph Armstrong, IBEW – Local 1245
Mike Donlon, Division
Van Howell, Area Director, Oakland Area Office of Federal OSHA, Region IX
Patrick McDermott, Davey Tree Expert Company
Gary McIver, Division
Sam Noonan, Noonan Tree Care

This working group met on July 18, 2011 primarily to address the provisions in Section 3423 “Electrical Hazards, General.” The Chair explained that at the two-day meetings in May we needed additional time and information to address issues such as the minimum approach distances for tree trimming work in proximity to electrical lines. In particular, there were concerns about California’s provisions when compared to the federal standards for work in proximity to low voltage electrical lines and conductors. The Chair summarized some of the discussions from the May 25, 26, 2011 committee meetings and concerns that the federal standards (e.g. 29 CFR 1910.269, Appendix A-3, and its reference back to Subpart S, electrical standards) could be interpreted to mean that only qualified line clearance tree trimmers or trainees could trim trees or shrubs within 10 feet of low voltage power lines and conductors.

The version of GISO Section 3423 and HVESO Section 2950 e-mailed to the subcommittee members in advance of the meeting, is similar to the language in the attached proposal for review. The Chair explained that he had further reviewed the federal standards and federal compliance directives and had discussions with Van Howell, Oakland Area Office of Federal OSHA. It was the Chair’s understanding that, with suitable instructions and training in electrical hazard awareness that meet the intent, or with provisions similar to the federal OSHA provisions and training requirements in 1910.333 and 1910.269 for a qualified person, a qualified tree worker should be permitted to perform tree trimming activities within 10 feet of low voltage (600 volts and less) power lines and conductors. There was agreement with this rationale by all members. Van Howell added that it is not the intent of the federal standards to prohibit low

voltage type tree trimming activities within a distance of 10 feet by employees qualified to do such work.

The members reviewed the draft proposal for Section 3423, Electrical Hazards. The Chair noted that the instructions required by proposed subsections (a)(1) through (a)(4) are modeled after similar language in the ANSI Z133.1-2006 standard, Section 4.1, and are also similar to certain instructions provided in the counterpart federal standards. The members agreed to this language as outlined in the attached proposal. The discussions continued to subsection (b). The Chair noted that the training listed in subsection (b)(2)(A) through (D) is modeled after the federal standard in 1910.269(a)(2)(ii) for a qualified employee (qualified person) with respect to electric power generation, transmission and distribution.

Mike Donlon suggested that some revisions of the federal language for this proposal should be considered for the type of work performed in low voltage residential and commercial service drop tree trimming. It was recommended that subsection (b)(2)(B) should focus on the skills and techniques necessary to determine the difference between low and high voltage energized conductors. The members agreed to this recommendation. The Chair also noted that subsection (b)(2)(D) is drafted for consistency with tree trimming operations that would typically be performed near low voltage electrical supply lines [see proposed subsection (b)(2)(D)].

With respect to Section 3423(b)(2), Gary McIver stated that it allows with specific training and conditions that a qualified tree worker can trim within 10 feet of low voltage lines but there is no minimum clearance or approach distance. Van Howell noted that the federal standard in 1910.333(c), Table S-5 is not specific to tree trimming; however, it says to avoid contact for 300 volts and less, and to have a 1 foot clearance over 300 volts, to not over 750 volts. Mr. McIver suggested that a minimum approach distance of 1 foot be established for the minimum clearance from low voltage power lines and conductors. Dave Anderson stated that is essentially what they are doing now. If a branch is touching a low voltage line, (e.g. residential service drop), one can remove the branch with the assistance of non-conductive tools. Mike Donlon polled the members to confirm that the 1 foot clearance was workable. There was a consensus that the distance was appropriate. Van Howell stated that would address the 1 foot clearance required in Table S-5 for voltages over 300 to not over 750. The committee agreed to the language in proposed in subsection (b)(2). There was discussion as to whether the term “nominal” should be applied to the voltage references; however, the members opted for clarity to omit this term.

The Chair explained that subsection (c) requires that line clearance tree trimming operations be conducted in accordance with Article 38 of the HVESO. A note refers to Sections 2940.2 and 2951 of the HVESO for the minimum approach distances and requirements for line clearance operations by qualified line clearance tree trimmers or trainees. This completed the review of Section 3423.

The Chair explained that it was also necessary to make amendments to HVESO Section 2950 “Application” related to line clearance tree trimming work. The Chair stated that the existing reference to Section 2946(b)(2), is deleted because Table 1 of Section 2946(b)(2) has a minimum required clearance of 6 feet for voltages starting at 600 to 50,000 volts. The 6 foot clearance is

in conflict with the 10 foot reference that defines “line clearance tree trimming operations” in Section 2700 of the HVESO. The existing table is also in conflict with federal standards that do not permit unqualified persons to perform line clearance work tree trimming within 10 feet of energized lines.

Therefore, in Section 2950, the reference to Section 2946(b)(2), is replaced by a new Table 1 similar to the ANSI Z133.1-2006 table related to minimum approach distances for other than qualified line clearance arborists or trainees. Note that an exception is proposed for Section 2950(b) that permits a qualified tree worker 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 the provisions in GISO Section 3423 related to such work are met. There were no revisions to the amendments shown in the attached proposal for Section 2950.

There were no other comments and the Chair thanked the attendees for their participation and adjourned the July 18, 2011 subcommittee meeting.