



## Final Regulation Agency Background Document

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| <b>Agency name</b>                                 | Virginia Department of Labor and Industry    |
| <b>Virginia Administrative Code (VAC) citation</b> | 16VAC25-73                                   |
| <b>Regulation title</b>                            | Tree Trimming Operations                     |
| <b>Action title</b>                                | Final Regulation on Tree Trimming Operations |
| <b>Date this document prepared</b>                 | August 13, 2009                              |

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 36 (2006) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

### Brief summary

*Please provide a brief summary (no more than 2 short paragraphs) of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation. Also, please include a brief description of changes to the regulation from publication of the proposed regulation to the final regulation.*

The final regulation is based on the American National Standard's Institute (ANSI) Z133.1-2006, Safety Requirements for Arboricultural Operations (With Modifications), for Application to Tree Trimming Operations. The regulation addresses non-logging, tree-trimming and cutting operations on residential and commercial work sites.

#### **The final regulation contains the following components:**

- General safety requirements (traffic control around the jobsite, emergency procedures and readiness, personal protective equipment, fire protection);
- Electrical hazards (working in proximity to electrical hazards, storm work and emergency conditions, line-clearance);

- Safe use of vehicles and mobile equipment used in arboriculture (aerial devices, brush chippers, sprayers and related equipment, stump cutters, vehicles, log loaders, knucklebooms, cranes and related hoists, specialized units, equipment-mounted winches);
- Portable power hand tools (portable electric power tools, chain saws, powered pole tools and backpack power units);
- Hand tools and ladders (cant hooks, cant dogs, peaveys and tongs, wedges, chisels, gouges, chopping tools, ladders);
- Work procedures (ropes and arborist climbing equipment, pruning and trimming, cabling, rigging, tree removal, bush removal and chipping, limbing and bucking, pesticide application); and
- Training for employees

**Major changes to the original proposed regulation are as follows:**

1. The Department recommends amending the Scope, purpose and applicability section to make it clear that:
  - line-clearance tree trimming activities as defined in the final regulation are covered by 16VAC25-90-1910.269
  - the final regulation will not apply to non-arboricultural landscaping operations
  - for certain tree trimming/removal operations such as right-of-ways for new utility installations, the employer must either comply with the Logging Standard, 16VAC25-90-1910.266, or with the final regulation under the direct supervision of a qualified arborist or qualified line-clearance arborist
2. The Department recommends adding/revising definitions as follows:
  - a definition for “Climbing system” is added
  - the definition of “Job briefing” is revised to make it clear that a job briefing is conducted “before work begins”
  - the definition for “Line clearance” is revised to a definition of “Line-clearance tree trimming” to make the definition identical to the same definition contained in 16VAC25-90-1910.269. However, wording in the original definition is retained to make it clear that such activities are “performed by the employees of the owner or operator of the electrical or communications systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work”, which is derived from the Overhead High Voltage Line Safety Act, Va. Code §59.1-406.
  - the definition of “Qualified arborist” is revised by removing the phrase “by possession of a recognized degree, certification or professional standing, or,” to

remove any confusion that such a degree or certification is a prerequisite for working in the industry

3. The Department recommends revising the first aid requirement as follows:

**“An employer is exempted from complying with 16VAC25-95.E.1 if it can document in writing that it initiated first aid/CPR training for all new crew personnel within two months (60 days) of hire, or whenever a previously employed person has accumulated forty-five (45) work days for the same employer during the previous year.”**

4. The Department recommends revising the Electrical hazards section as follows:

- line-clearance tree trimming activities as defined in the final regulation are covered by 16VAC25-90-1910.269
- non-line-clearance tree trimming work around overhead high voltage lines (voltage in excess of 600 volts) is covered by the Overhead High Voltage Line Safety Act, Va. Code §§59.1-406 through 59.1-414.
- non-line-clearance tree trimming work around overhead electrical lines of 600 volts or less is covered by 16VAC25-90-1910.333(c)(1)
- Table 1, Minimum approach distances, is deleted
- Storm work and emergency conditions: line-clearance, section is deleted

5. The Department recommends revising the vehicles and mobile equipment section as follows:

- Section 16VAC25-73-60.A.7 is revised: **[If previously installed by the manufacturer, skid resistant S s]** top surfaces and platforms on mobile equipment shall be **[skid-resistant properly maintained.]**
- Section 16VAC25-73-60.A.9 is revised to clarify that fall protection is not required when employees are performing inspections on top of vehicles/mobile equipment when the fall would be six feet or more above a lower level.

6. The Department recommends revising the work procedures section as follows:

**[All components of a climbing system (e.g., ropes, pulleys, etc.) shall meet the manufacturer's design, specifications and limitations. Components from different climbing systems shall not be combined without prior approval of the manufacturers. The qualified arborist shall assure that each component of the climbing system is approved by the manufacturer for its intended use as well as its compatibility with other components of the climbing system.]**

### Statement of final agency action

*Please provide a statement of the final action taken by the agency including (1) the date the action was taken, (2) the name of the agency taking the action, and (3) the title of the regulation.*

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On August 13, 2009, the Virginia Safety and Health Codes Board adopted a final regulation of the Board on Tree Trimming Operations, 16VAC25-73.

### Legal basis

*Please identify the state and/or federal legal authority to promulgate this proposed regulation, including (1) the most relevant law and/or regulation, including Code of Virginia citation and General Assembly chapter numbers, if applicable, and (2) promulgating entity, i.e., agency, board, or person. Describe the legal authority and the extent to which the authority is mandatory or discretionary.*

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The Safety and Health Codes Board is authorized by Title 40.1-22(5) to:

“... adopt, alter, amend, or repeal rules and regulations to further, protect and promote the safety and health of employees in places of employment over which it has jurisdiction and to effect compliance with the federal VOSH Act of 1970...as may be necessary to carry out its functions established under this title.”

“In making such rules and regulations to protect the occupational safety and health of employees, the Board shall adopt the standard which most adequately assures, to the extent feasible, on the basis of the best available evidence that no employee will suffer material impairment of health or functional capacity.”

“However, such standards shall be at least as stringent as the standards promulgated by the federal OSH Act of 1970 (P.L.91-596). In addition to the attainment of the highest degree of health and safety protection for the employee, other considerations shall be the latest available scientific data in the field, the feasibility of the standards, and experiences gained under this and other health and safety laws.”

### Purpose

*Please explain the need for the new or amended regulation. Describe the rationale or justification of the proposed regulatory action. Detail the specific reasons it is essential to protect the health, safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.*

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The purpose of the final regulation is to reduce/eliminate employee injuries and fatalities by adoption of a comprehensive regulation to address non-logging, arborist/tree trimming and cutting operations on residential and commercial work sites.

VOSH currently applies the Logging Standard, 1910.266, to arborists/tree trimming operations anytime a tree is “felled,” or cut down. The Logging Standard does not apply to tree trimming activities where the tree is not felled or cut down, so there is no specific regulation to address hazards associated with just trimming trees.

In instances where the Logging Standard does not apply, VOSH has had to use regulations of general application to address some hazards (e.g., 1910.95, Occupational Noise Exposure; 1910.132, Personal protective equipment; 1910.133, Eye and face protection; 1910.135, Head Protection; 1910.136, Foot protection; 1910.151, Medical services and first aid; 1910.67, Vehicle-mounted elevating and rotating work platforms; etc.), and the “general duty clause,” Va. Code §40.1-51.1(a), which provides that:

“It shall be the duty of every employer to furnish to each of his employees safe employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees....”

As is evident from the wording of the statute, it does not address in anyway the issue of hazards associated with tree trimming operations. Instead VOSH procedures and court case law would allow the VOSH Program to issue a general duty violation and base it on a national consensus standard addressing tree trimming hazards (such as the ANSI Z133.1-2006 standard), or some other reliable industry standard the tree trimmer knew of or should have known about. While preferable to no enforcement tool at all, the general duty clause does not provide either the regulated community, employees or the VOSH Program with substantive and consistent procedures and guidance on how to reduce or eliminate tree trimming hazards. Other problems with the use of the general duty clause include the inability to use it to enforce and consensus standard provisions which use “should” or “may” language, and the inability to cite other-than-serious violations.

The arborist industry has complained locally and nationally about application of the Logging Standard to their industry because they work in residential neighborhoods and commercial areas, not in a forest; and because they often use teams of workers in directional felling of trees (with the use of ropes) and “piecing out” of trees or cutting down trees in sections (loggers usually do not operate in teams or piece out trees). They consider their work and the hazards they face to be fundamentally different from hazards faced by loggers.

The need for the regulation is very evident when fatality statistics are reviewed. As the chart below demonstrates, since 1993 Virginia has had 46 non-logging, tree trimming/cutting/felling fatalities (7% of all fatalities since 1993), with 34 of those occurring since 2000 (9% of all fatalities since 2000). For an industry of the relatively small size of the tree care industry, this is a very high number of fatal accidents.

Virginia Occupational Safety and Health  
 Tree-Related Fatality Statistics (Non-Logging) as of September 28, 2007

| Year            | Chipper  | Tree Trimming | Aerial Lift | Power Line | Struck-by Vehicle | Site Clearance | Total     | Total VOSH Fatalities | Percentage of Tree Fatalities |
|-----------------|----------|---------------|-------------|------------|-------------------|----------------|-----------|-----------------------|-------------------------------|
| 2007            |          | 2             |             |            |                   |                | 2         | 30                    | 7%                            |
| 2006            |          | 4             |             | 3          | 1                 |                | 8         | 56                    | 14%                           |
| 2005            |          | 1             |             |            | 1                 |                | 2         | 59                    | 3%                            |
| 2004            |          | 2             |             | 1          |                   | 1              | 4         | 51                    | 8%                            |
| 2003            |          | 4             |             | 1          |                   |                | 5         | 47                    | 11%                           |
| 2002            |          | 4             |             |            |                   |                | 4         | 48                    | 8%                            |
| 2001            |          | 4             |             |            | 2                 |                | 6         | 54                    | 11%                           |
| 2000            |          | 1             |             | 2          |                   |                | 3         | 59                    | 5%                            |
| <b>subtotal</b> |          | <b>22</b>     | <b>0</b>    | <b>7</b>   | <b>4</b>          | <b>1</b>       | <b>34</b> | <b>404</b>            | <b>8%</b>                     |
| 1999            |          | 2             |             |            |                   |                | 2         | 45                    | 4%                            |
| 1998            |          |               |             | 2          |                   |                | 2         | 40                    | 5%                            |
| 1997            | 1        | 1             | 1           |            |                   | 1              | 4         | 56                    | 7%                            |
| 1996            |          | 2             |             |            |                   |                | 2         | 49                    | 4%                            |
| 1995            |          |               |             |            |                   |                | 0         | 32                    | 0%                            |
| 1994            |          |               |             |            |                   | 1              |           | 50                    | 0%                            |
| 1993            |          |               |             | 1          |                   |                | 1         | 26                    | 4%                            |
| <b>subtotal</b> | <b>1</b> | <b>5</b>      | <b>1</b>    | <b>3</b>   | <b>0</b>          | <b>2</b>       | <b>12</b> | <b>298</b>            | <b>4%</b>                     |
| <b>total</b>    | <b>1</b> | <b>27</b>     | <b>1</b>    | <b>10</b>  | <b>4</b>          | <b>3</b>       | <b>46</b> | <b>702</b>            | <b>7%</b>                     |

SIC Codes: 0782, 0783, 0191, 1623, 1629 and 2411

NOTE: Logging fatalities are not included in the above table.

**Substance**

*Please identify and explain the new substantive provisions, the substantive changes to existing sections, or both where appropriate. A more detailed discussion is required under the "All changes made in this regulatory action" section.*

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for Application to Tree Trimming Operations. The regulation addresses non-logging, tree-trimming and cutting operations on residential and commercial work sites.

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**The following issues have been addressed in recommended changes to the original text for ANSI Z133.1-2006:**

- Clarification is provided with regard to the following areas:
  - Line-clearance tree-trimming (see 1910.269), and the Overhead High Voltage Line Safety Act, Va. Code §§59.1-406 to -414
  - Logging operations (see 1910.266)
  - Lot clearing activities involving felling of trees (see 1910.266)
- The original text contained “should” or “may” language in some provisions, which are unenforceable from a compliance standpoint. Prescriptive language such as “shall” or “will” was added, as appropriate.
- VOSH currently enforces ARM §120 (16VAC25-60-120) requiring that employers comply with manufacturer’s specifications and limitations applicable to the operation, training, use, installation, inspection, testing, repair and maintenance of machinery, vehicles, tools, materials and equipment. ANSI Z133.1-2006 contains provisions that

address the use and operation of machinery, vehicles, tools, etc., so any conflicts with ARM §120 (16VAC25-60-120) have been corrected (e.g., ANSI Z133.1-2006 contains provisions allowing the use of a crane to lift an individual in an arborist's saddle, but the ability to make such a lift would be contingent on the crane manufacturer's operating instructions).

- The original text contains provisions addressing traffic safety and references the U. S. Department of Transportation (DOT) Manual on Uniform Traffic Control Devices (MUTCD) and applicable state and local laws and regulations. Although the MUTCD has been adopted by OSHA and VOSH, it has been found to contain a great deal of “should” or “may” language, which means those provisions are not enforceable in a compliance setting. In its stead, the Virginia Department of Transportation (VDOT) Manual on Uniform Traffic Control Devices has been substituted as it contains fewer “shoulds” and “mays”.
- The original text contains provisions addressing first aid and cardiopulmonary resuscitation (CPR). The Board's current rulemaking which proposes a change in the general industry requirements for first aid/CPR is incorporated by reference.
- The original text addresses the issue of exposure to noise hazards. Reference is made in the final regulation to requirements contained in the VOSH Noise Standard, 1910.95.
- The original text addresses the use of personal protective equipment (PPE). Reference is made in the final regulation to requirements contained in the VOSH PPE Standards, 1910.132 through 138.
- The original text contains provisions addressing reverse signal operation of vehicles. The Board's current rulemaking which proposes a change in the general industry requirements for reverse signal operation of vehicles is incorporated by reference.
- The original text contains provisions addressing proper use of personal fall arrest systems while working from an aerial lift (permits use of either a full body harness and lanyard or a body belt and lanyard). In light of advances in PPE and current manufacturer's requirements for use of PPE in aerial lifts (full body harness and energy absorbing lanyard are normally required while working from aerial lifts), the option to allow an employee to use a body belt and lanyard in an aerial lift has been removed.
- The original text addresses the use of cranes. In light of certain requirements contained in VOSH Standards 1910.180, Crawler, Locomotive and Truck Cranes, and 1910.184, Slings, certain additions have been made (e.g. the prohibition against employees working under a suspended load of a crane).
- Certain arborist-related terms used in the original text were not defined in (e.g., “split-tail system” and “split tails”). Definitions have been added.



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**Issues**

*Please identify the issues associated with the proposed regulatory action, including:*

- 1) *the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions;*
- 2) *the primary advantages and disadvantages to the agency or the Commonwealth; and*
- 3) *other pertinent matters of interest to the regulated community, government officials, and the public.*

*If there are no disadvantages to the public or the Commonwealth, please indicate.*

Summary of Rulemaking Process:

A Notice of Intended Regulatory Action (NOIRA) was adopted by Board on October 18, 2007. The NOIRA was published on February 4, 2008, with 30-day comment period ending March 4, 2008. Comments received during the 30-day comment period were addressed during the proposed rulemaking stage.

The Department held a meeting on June 10, 2008, with interested parties from the tree trimming industry. A summary of the meeting is provided below.

The Board adopted proposed regulatory language on July 10, 2008. The proposed regulation was published on March 16, 2009, with a 60-day comment period ending on May 15, 2009. A public hearing was held by the Board on April 16, 2009. The results of the 60 day comment period and public hearing are summarized below.

#### Issues:

As discussed in the Purpose section above, the need for the regulation is very evident when fatality statistics are reviewed. As the chart below demonstrates, since 1993 Virginia has had 46 non-logging, tree trimming/cutting/felling fatalities (7% of all fatalities since 1993), with 34 of those occurring since 2000 (9% of all fatalities since 2000). For an industry of the relatively small size of the tree care industry, this is a very high number of fatal accidents.

The arborist industry has also complained locally and nationally about application of the Logging Standard to their industry because they work in residential neighborhoods and commercial areas, not in a forest; and because they often use teams of workers in directional felling of trees (with the use of ropes) and “piecing out” of trees or cutting down trees in sections (loggers usually do not operate in teams or piece out trees). They consider their work and the hazards they face to be fundamentally different from hazards faced by loggers.

#### Meeting With Interested Parties

The Department held a meeting on June 10, 2008, with interested parties from the tree trimming industry. The following individuals attended:

Peter Gerstenberger, Senior Advisor for Safety, Compliance & Standards  
Tree Care Industry Association (TCIA)  
Bryan Giere, CTSP, Northern Virginia Tree Experts, Inc.  
Andrew T. Ross, CTSP, President, RTEC Treecare  
Sten Compe, Big "O" Tree & Lawn Service Inc.  
M. Scott Turner, CTSP, President, TrueTimber Tree Service, Inc.  
David G. Marren, Vice President of Regulatory Affairs, F. A. Bartlett Tree Expert Co.  
Peter Girardi, TrueTimber Tree Service, Inc.  
Thomas R. Scallorn, CSP, Virginia Department of Transportation  
Kristina Villaire, City of Virginia Beach  
Bill Burge, Assistant Commissioner, Department of Labor and Industry  
Glenn Cox, VOSH Director, Department of Labor and Industry  
Danny Burnett, Senior Safety Engineer, VOSH Richmond Regional Office  
John Crisanti, Planning and Policy Manager, Department of Labor and Industry  
Jay Withrow, Director, Office of Legal Support, Department of Labor and Industry

Department staff opened the meeting with introductions and reviewed the purpose of the meeting, which was to focus on the draft proposed regulation text based on ANSI Z-133.1-2006,

and other issues identified during the meeting. Representatives of TCIA related their support for the regulatory effort and Department staff related that this issue goes back to a 2000 meeting between Department staff and the TCIA's predecessor organization, the National Arborist's Association, where the possibility of a unique tree trimming regulation based on ANSI Z-133 was discussed. At that time the ANSI standard had a great deal of advisory language, such as "should" and "may", which is not enforceable under OSHA case law. In several subsequent revisions, the TCIA and ANSI committee worked diligently to eliminate much of the advisory language, resulting in the 2006 version, which served as the basis for the proposed regulation.

The group then proceeded to review text under consideration by the Department. The main issues discussed during the meeting are listed below:

- \* 1.3., Application – discussed issue of “site clearing” and how the regulation would apply/not apply, depending on whether a certified or qualified arborist was directly supervising activities on site.
- \* 1.4., Responsibilities of the Employee – discussed issue of employee rights and responsibilities being currently listed in Va. Code §40.1-51.2. Also discussed changing this section to address a general orientation/training/retraining requirement for employees.
- \* 3.2., Traffic Control Around the Jobsite – discussed substitution of the Virginia Department of Transportation's (VDOT) “Work Area Protection Manual” for the U.S. Department of Transportation's (DOT) Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD has a great deal of advisory language which makes it unenforceable much of the time. The group agreed that part of an eventual training program for the final regulation should provide information on the main differences between the VDOT manual and the MUTCD.
- \* 3.3.2 and 3.3.5, Emergency Procedures and Readiness – discussed issue of first aid/CPR and that the tree trimming industry would have to comply with the Board's regulation on Medical Services and First Aid, 16 VAC 25-95 if that regulation becomes final, and if it does not the current regulation in 1910.151 would apply.
- \* 4.2., Working in Proximity to Electrical Hazards – discussed issue of line- clearance tree trimming and application of the Overhead High Voltage Line Safety Act, Va. Code §§59.1-406 to -414. Participants commented on difficulties they have had with Dominion Virginia Power's timeliness and responsiveness to requests from tree trimmers for temporary safety arrangements. Department staff said they would consider contacting power company representatives and look at the possibly of partnering in some way with the power companies on this issue. There was a concern expressed that some tree trimming companies would attempt to comply with the statute, experience significant delay or receive outright refusals to sleeve lines, and then the homeowner/property owner would contract with someone else who would trim the trees without making the proper safety arrangements or with untrained people, resulting in accidents.
- \* 5.1.9., Safe Use of Vehicles and Mobile Equipment Use in Arboriculture – discussed issue of fall protection for employees when “riding or working outside or on top of units.” The Department inserted language requiring fall protection for employees performing maintenance or inspection on top of units 6 feet or more above a lower level, which is the requirement in construction.

- \* 5.1.11, Safe Use of Vehicles and Mobile Equipment Use in Arboriculture – discussed issue of reverse signal operation of vehicles and that the tree trimming industry would have to comply with the Board’s regulation on Reverse Signal Operations, 16 VAC 25-97, if that regulation becomes final, and if it does not, then with current regulations.
- \* 5.3., Brush Chippers – discussed issue of what constituted “damage” to vehicles, tools, equipment, that would entail removal of the item from service and tagging until the item is repaired or discarded. Department staff agreed to add a definition for the term “damage” to the regulation.
- \* 5.7., Log Loaders, Knucklebooms, Cranes and Related Hoists – discussed issues related to the use of a crane to lift tree trimmers into a tree, as a last resort if other methods for trimming would create a greater hazard to employee safety. Department staff added language to the proposed regulation based on 1926.550(g), which addresses use of personnel baskets on cranes in the construction industry. It also reviewed several other provisions from 1926.550(g) with the group to see if they were appropriate to add to enhance safety (1926.550(g)(3)(i)(B) [added]; (g)(3)(i)(D) [not added]; (g)(3)(i)(F) [not added]; (g)(5)(i) [added with changes]; (g)(6)(v) [added with changes]. The group agreed that the ANSI 5.7.9.11 and .12 be deleted (these provisions would have allowed the tree trimmer to be tied off to the crane while it was under load).
- \* 5.9., Equipment Mounted Winches – discussed issue of use of synthetic lines as well as steel cables on winches. Much of the industry is moving to synthetic lines for some uses as a way of reducing injury from steel cables breaking.
- \* 8.1.1, Ropes and Arborist Climbing Equipment - the group discussed the issue of adding a section on tree risk assessment, based on the NAA Pocket Guide for Identifying Hazard Trees. The TCIA agreed to contact Dr. Eric Wiseman of Virginia Tech, who could serve as an expert consultant on the issue.
- \* 8.1.3, Ropes and Arborist Climbing Equipment – discussed adding a definition for the term “split-tail system”, which was not previously defined.
- \* 8.1.8., Ropes and Arborist Climbing Equipment – discussed issue of allowable minimum rope diameter – changed from ½ to 7/16 (11 mm).
- \* 8.1.22, Ropes and Arborist Climbing Equipment – discussed adding a definition for the terms “false crotch” and “false crotch redirect”, which were not previously defined.
- \* 8.3., Cabling – discussed adding additional safety procedures for removing/replacing cabling systems. Industry representatives agreed to provide suggested language.
- \* 8.4.17., Rigging - discussed adding a definition for the term “load binder”, which was not previously defined.
- \* Department staff asked industry personnel to provide information on numbers of employers/employees impacted by the regulation, estimates of average wages and average training time/costs.
- \* Industry personnel requested that in any training materials eventually developed for the final regulation that the Department provide information on typical hazards and applicable standards in tree industry work shops.

**Changes made since the proposed stage**

Please describe all changes made to the text of the proposed regulation since the publication of the proposed stage. For the Registrar’s office, please put an asterisk next to any substantive changes.

| Section number  | Requirement at proposed stage   | What has changed   | Rationale for change  |
|-----------------|---|--|---|
| 16VAC25-73-10.C | <p>C. This regulation is intended to apply to all employers engaged in the business, trade, or performance of arboriculture, including employers engaged in tree pruning, repairing, maintaining; removing trees; cutting brush; or performing pest or soil management who hire one or more persons to perform such work. This regulation may require situational modifications in response to personnel emergencies and is not intended to limit the options available to emergency responders. This regulation does not apply to logging operations covered by 16VAC25-90-1910.266. This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a qualified arborist. Such activities are covered by 16VAC25-90-1910.266.</p> | <p>* C. This regulation is intended to apply to all employers engaged in the business, trade, or performance of arboriculture, including employers engaged in tree pruning, repairing, maintaining; removing trees; cutting brush; or performing pest or soil management <b><u>[during tree care operations]</u></b> who hire one or more persons to perform such work. This regulation may require situational modifications in response to personnel emergencies and is not intended to limit the options available to emergency responders. <b><u>[This regulation does not apply to non-arboricultural landscaping operations. This regulation does not apply to line-clearance tree trimming activities as defined in 16VAC25-73-20. Such activities are covered by 16VAC 25-90-1910.269.]</u></b></p> <p>This regulation does not apply to logging operations covered by 16VAC25-90-1910.266. This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, <b><u>[right-of-ways for new utility installations]</u></b> or other related activities, unless directly supervised by a qualified arborist <b><u>[or qualified line-clearance arborist]</u></b>. Such activities are covered by 16VAC25-90-1910.266.</p> | <p>Rationale: Amend language concerning pesticide application requirements to clarify that the regulation is only intended to apply to tree care operations and not intended to be more widely applicable to landscaping operations.</p> <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p> <p>Rationale: Change clarifies that or certain tree trimming/removal operations such as right-of-ways for new utility installations, the employer must either comply with the Logging Standard, 16VAC25-90-1910.266, or with the final regulation under the direct supervision of a qualified arborist or qualified line-clearance arborist.</p> |
| 16VAC25-        |   | <p>* <b><u>[“Climbing system” means the various pieces of gear or</u></b></p>  | <p>Rationale: Definition of</p>   |

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| <p>73-20, Definitions</p> | <p>N/A</p> <p>"Job briefing" means the communication of at least the following subjects for arboricultural operations: hazards associated with the job, work procedures involved, special precautions, electrical hazards, job assignments, and personal protective equipment.</p> <p>"Kilovolt, kV (Tables 1 and 2 )" means the term for 1,000 volts, abbreviated as kV. Higher voltages are generally given as kilovolts. Example: 12.5 kV (12,500 volts) and 19.9 kV (19,900 volts).</p> <p>"Line clearance" means the pruning, trimming, repairing, maintaining, removing, treating, or clearing of trees or the cutting of brush (vegetation management) that is within 10 feet (3.05 m) of electric supply lines and equipment; and vegetation management work performed by qualified line-clearance arborists or qualified line-clearance arborist trainees for the</p> | <p><u>components that the arborist relies upon to secure himself/herself while aloft in the tree, such as but not limited to: an arborist saddle, one or more arborist climbing lines, and one or more lanyards as well as carabiners and/or snap hooks approved by their manufacturer for climbing.]</u></p> <p>"Job briefing" means the communication <u>before work begins</u> of at least the following subjects for arboricultural operations: hazards associated with the job, work procedures involved, special precautions, electrical hazards, job assignments, and personal protective equipment.</p> <p>"Kilovolt, kV (Table <del>is 1 and 2</del> )" means the term for 1,000 volts, abbreviated as kV. Higher voltages are generally given as kilovolts. Example: 12.5 kV (12,500 volts) and 19.9 kV (19,900 volts).</p> <p>* <del>["Line clearance"</del> <u>"Line-clearance tree trimming"</u> means the pruning, trimming, repairing, maintaining, removing, <del>treating</del>, or clearing of trees or the cutting of brush (vegetation management) that is within 10 feet (3.05 m) of electric supply lines and equipment; <del>and vegetation management work performed by qualified line-clearance arborists or qualified line-clearance arborist trainees for the construction or maintenance of electric supply lines and/or the electric utility right-of-way</del></p> | <p>"climbing system" is added since term was not previously defined.</p> <p><b>Rationale:</b> Amend language that defines job briefings to clarify that the briefings are meant to provide information before work begins and about what tasks, equipment, etc., will be required to complete a job.</p> <p>Rationale: Table 2 deleted from regulation, see below.</p> <p>Rationale: The definition for "Line clearance" is revised to a definition of "Line-clearance tree trimming" to make the definition identical to the same definition contained in 16VAC25-90-1910.269. However, wording in the original definition is retained to make it clear that such activities are "performed by the employees of the owner or</p> |
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| <p>16VAC25-73-40.C.5</p> | <p>construction or maintenance of electric supply lines and/or the electric utility right-of-way corridor. Lineclearance activities are performed by the employees of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.</p> <p>"Minimum approach distance" means safe working distances from overhead electrical conductors as defined in Tables 1 and 2 of 16VAC25-73-50.</p> <p>"Phase to ground (Table <b>[s 1 and 2]</b> )" means the electric potential (voltage) between a conductor and ground.</p> <p>"Qualified arborist" means an individual who, by possession of a recognized degree, certification, or professional standing, or through related training and on-the-job experience, is familiar with the equipment and hazards involved in arboricultural operations and who has demonstrated ability in the performance of the special techniques involved.</p> <p>5. Cardiopulmonary resuscitation (CPR) and first-aid training shall be provided in accordance with 16VAC25-95.</p> | <p><del>corridor</del>]. Line-clearance <b>[tree trimming]</b> activities are performed by the employees of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.</p> <p>"Minimum approach distance" means safe working distances from overhead electrical conductors as defined in Table <b>[s 1 and 2]</b> of 16VAC25-73-50.</p> <p>"Phase to ground (Table <b>[s 1 and 2]</b> )" means the electric potential (voltage) between a conductor and ground.</p> <p>* "Qualified arborist" means an individual who, <del>[by possession of a recognized degree, certification, or professional standing, or]</del> through related training and on-the-job experience, is familiar with the equipment and hazards involved in arboricultural operations and who has demonstrated ability in the performance of the special techniques involved.</p> <p>* 5. Cardiopulmonary resuscitation (CPR) and first-aid training shall be provided in accordance with 16VAC25-95. <b><u>[An employer is exempted from complying with 16VAC25-95.E.1 if it can document in writing that it initiated first-aid/CPR training for all new crew</u></b></p> | <p>operator of the electrical or communications systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work”, which is derived from the Overhead High Voltage Line Safety Act, Va. Code §59.1-406.</p> <p>Rationale: Table 1 deleted from regulation and Table 2 redesignated as Table 1, see below.</p> <p>Rationale: Table 1 deleted from regulation and Table 2 redesignated as Table 1, see below.</p> <p>Rationale: Remove language that references "possession of a recognized degree, certification or professional status" from the proposed definition of a "qualified arborist," to avoid possible restraint of trade issues and to limit costs of implementing the regulation.</p> <p>Rationale: Change made to give some flexibility to employers in an industry with high turnover rate and in recognition of situations such as unforeseen employee absences and the</p> |
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| <p>16VAC25-73-50.A.1</p> | <p>1. All overhead and underground electrical conductors and all communication wires and cables shall be considered energized with potentially fatal voltages.</p>   | <p><b><u>personnel within two months (60 days) of hire, or whenever a previously employed person has accumulated forty-five (45) work days for the same employer during the previous year.”]</u></b></p>  | <p>fact that when a new employee is hired, it will be difficult for an employer to obtain immediate first aid/CPR training for the individual.</p>  |
| <p>16VAC25-73-50.A.4</p> | <p>1. All overhead and underground electrical conductors and all communication wires and cables shall be considered energized with potentially fatal voltages.</p> <p>4. If the minimum approach distance for a qualified line-clearance arborist (shown in Table 1 of this section) or for a qualified arborist (shown in Table 2 of this section) cannot be maintained during arboricultural operations, the electrical system owner/operator shall be advised and an electrical hazard abatement plan implemented before any work is performed in proximity to energized electrical conductors.</p> | <p>* 1. All overhead and underground electrical conductors and all communication wires and cables shall be considered energized with potentially fatal voltages. <b><u>[This section does not apply to line-clearance tree trimming as defined in 16VAC25-73-20, which shall be conducted in accordance with 16VAC25-90-1910.269. Non-line-clearance tree trimming work around overhead high voltage lines covered by §§ 59.1-406 through 59.1-414 of the Code of Virginia, Overhead High Voltage Line Safety Act (Act)(voltage in excess of 600 volts as defined in the Act), shall be conducted in accordance with the Act. Non-line-clearance tree trimming work around overhead electrical lines of 600 volts or less not covered by the Act shall be conducted in accordance with 16VAC25-90-1910.333(c)(1).]</u></b></p> <p>* <del>[4. If the minimum approach distance for a qualified line-clearance arborist (shown in Table 1 of this section) or for a qualified arborist (shown in Table 2 of this section) cannot be maintained during arboricultural operations, the electrical system owner/operator shall be advised and an electrical hazard abatement plan implemented before any work is performed in proximity to energized electrical conductors.]</del></p> | <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p> <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p> |

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| <p>16VAC25-73-50.B.1</p>         | <p>B. Working in proximity to electrical hazards.</p> <p>1. The items contained in subsection A of this section shall always be included in the review of this section. Sections 59.1-406 through 59.1-414 of the Code of Virginia, Overhead High Voltage Line Safety Act (Act), are hereby incorporated by reference, and apply as specified in the Act anytime the voltage of overhead high voltage lines , as defined in the Act, exceeds 600 volts. The Act does not apply anytime line-clearance activities are performed by the employees of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.</p> | <p>B. Working in proximity to electrical hazards.</p> <p>1. The items contained in subsection A of this section shall always be included in the review of this section. Sections 59.1-406 through 59.1-414 of the Code of Virginia, Overhead High Voltage Line Safety Act (Act), are hereby incorporated by reference, and apply as specified in the Act anytime the voltage of overhead high voltage lines [<del>as defined in the Act,</del>] exceeds 600 volts [<u>as defined in the Act</u>]. The Act does not apply anytime line-clearance activities are performed by the employees of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.</p> | <p>Rationale: Non-substantive format change.</p>  |
| <p>16VAC25-73-50.B.4.a and b</p> | <p>4. A second qualified line-clearance arborist or line-clearance arborist trainee shall be within visual or normal (that is unassisted) voice communication during line-clearing operations aloft when an arborist must approach closer than 10 feet (3.05 m) to any energized electrical conductor in excess of 750 volts (primary conductor) or when:</p> <p>a. Branches or limbs closer than 10 feet (3.05 m) to any energized electrical conductor in excess of 750 volts (primary conductor) are being removed, which cannot first be cut (with a nonconductive pole pruner/pole saw) to sufficiently clear electrical conductors, so as to avoid</p>  | <p><del>* [4. A second qualified line-clearance arborist or line-clearance arborist trainee shall be within visual or normal (that is unassisted) voice communication during line-clearing operations aloft when an arborist must approach closer than 10 feet (3.05 m) to any energized electrical conductor in excess of 750 volts (primary conductor) or when:</del></p> <p><del>a. Branches or limbs closer than 10 feet (3.05 m) to any energized electrical conductor in excess of 750 volts (primary conductor) are being removed, which cannot first be cut (with a nonconductive pole pruner/pole saw) to sufficiently clear electrical conductors, so as to avoid contact; or</del></p> <p><del>b. Roping is required to remove</del></p>                         | <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p> |

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| <p>16VAC25-73-50, Table 1</p>  | <p>contact; or</p> <p>b. Roping is required to remove branches or limbs from such electrical conductors.</p> <p>Table 1 [see below – table to large for column]</p>   | <p><del>branches or limbs from such electrical conductors.]</del></p> <p>Table 1 deleted [see below – table too large for column]</p>  | <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p>  |
| <p>16VAC25-73-50, Table 2</p>  | <p>Table 2 [see below – table to large for column]</p>  | <p>Table 2, renumbered as Table 1 [see below – table to large for column]</p>  | <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p>  |
| <p>16VAC25-73-50.B.5 to 15</p> | <p>5. Qualified line-clearance arborists and line-clearance arborist trainees shall maintain minimum approach distances from energized electrical conductors in accordance with Table 1.</p> <p>6. All other arborists and other workers shall maintain a minimum approach distance from energized electrical conductors in accordance with Table 2.</p> <p>7. Branches hanging on an energized electrical conductor shall be removed using nonconductive equipment.</p> <p>8. The tie-in position shall be above the work area and located in such a way that a slip would swing the arborist away from any energized electrical conductor or other identified hazard.</p> | <p><del>* [5. Qualified line-clearance arborists and line-clearance arborist trainees shall maintain minimum approach distances from energized electrical conductors in accordance with Table 1.]</del></p> <p><del>[6. 4.] All other arborists and other workers shall maintain a minimum approach distance from energized electrical conductors in accordance with Table [2. 1.]</del></p> <p><del>* [7. Branches hanging on an energized electrical conductor shall be removed using nonconductive equipment.]</del></p> <p><del>[8. 5.] The tie-in position shall be above the work area and located in such a way that a slip would swing the arborist away from any energized electrical conductor or other identified hazard.</del></p> | <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p> <p>Rationale: Renumbering.</p> <p>Rationale: Renumbering.</p> <p>Rationale: Renumbering.</p> |

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|  | <p>9. While climbing, the arborist shall climb on the side of the tree that is away from energized electrical conductors while maintaining the required distances shown in Table 1.</p> <p>10. Footwear, including lineman's overshoes or those with electrical-resistant soles, shall not be considered as providing any measure of safety from electrical hazards.</p> <p>11. Rubber gloves, with or without leather or other protective covering, shall not be considered as providing any measure of safety from electrical hazards.</p> <p>12. A rope that is wet, that is contaminated to the extent that its insulating capacity is impaired, or that is otherwise not to be considered insulated for the voltage involved shall not be used near exposed energy lines.</p> <p>13. Ladders, platforms, and aerial devices, including insulated aerial devices, shall be subject to minimum approach distances in accordance with Table 1 or 2, as applicable.</p> <p>14. Aerial devices with attached equipment (such as chippers) brought into contact with energized electrical conductors shall be considered energized. Contact by people and/or equipment shall be avoided.</p> <p>15. Emergency response to an electric contact shall be performed in accordance with</p> | <p><del>[9. 6.]</del> While climbing, the arborist shall climb on the side of the tree that is away from energized electrical conductors while maintaining the required distances shown in Table 1 <del>[or 2, as applicable]</del>.</p> <p><del>[10. 7.]</del> Footwear, including lineman's overshoes or those with electrical-resistant soles, shall not be considered as providing any measure of safety from electrical hazards.</p> <p><del>[11. 8.]</del> Rubber gloves, with or without leather or other protective covering, shall not be considered as providing any measure of safety from electrical hazards.</p> <p><del>[12. 9.]</del> A rope that is wet, that is contaminated to the extent that its insulating capacity is impaired, or that is otherwise not to be considered insulated for the voltage involved shall not be used near exposed energy lines.</p> <p><del>[13.10.]</del> Ladders, platforms, and aerial devices, including insulated aerial devices, shall be subject to minimum approach distances in accordance with Table 1 <del>[or 2, as applicable]</del>.</p> <p><del>[14. 11.]</del> Aerial devices with attached equipment (such as chippers) brought into contact with energized electrical conductors shall be considered energized. Contact by people and/or equipment shall be avoided.</p> <p><del>[15. 12.]</del> Emergency response to an electric contact shall be performed in</p> | <p>Rationale: Renumbering.</p> <p>Rationale: Renumbering.</p> <p>Rationale: Renumbering.</p> <p>Rationale: Renumbering.</p> <p>Rationale: Renumbering; and Table 1 deleted from regulation and Table 2 redesignated as Table 1, see above.</p> <p>Rationale: Renumbering.</p> <p>Rationale: Renumbering.</p> |
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| <p>16VAC25-73-50.C.1 to 4</p> | <p>16VAC25-73-40 C.</p> <p>C. Storm work and emergency conditions: line clearance.</p> <p>1. The items contained in subsection A of this section shall always be included in the review of this section.</p> <p>2. Line clearance shall not be performed during adverse weather conditions such as thunderstorms, high winds, and snow and ice storms.</p> <p>3. Qualified line-clearance arborists and qualified line-clearance arborist trainees performing line clearance after a storm or under similar conditions shall be trained in the special hazards associated with this type of work.</p> <p>4. Line-clearance operations shall be suspended when adverse weather conditions or emergency conditions develop involving energized electrical conductors. Electrical system owners/operators shall be notified immediately.</p> | <p>accordance with 16VAC25-73-40 C.</p> <p><del>* [C. Storm work and emergency conditions: line clearance.</del></p> <p><del>1. The items contained in subsection A of this section shall always be included in the review of this section.</del></p> <p><del>2. Line clearance shall not be performed during adverse weather conditions such as thunderstorms, high winds, and snow and ice storms.</del></p> <p><del>3. Qualified line-clearance arborists and qualified line-clearance arborist trainees performing line clearance after a storm or under similar conditions shall be trained in the special hazards associated with this type of work.</del></p> <p><del>4. Line-clearance operations shall be suspended when adverse weather conditions or emergency conditions develop involving energized electrical conductors. Electrical system owners/operators shall be notified immediately.]</del></p> | <p>Rationale: Amend language to clarify that regulation does not apply to “line-clearance tree trimming” which is already covered by 16VAC25-90-1910.269.</p>   |
| <p>16VAC25-73-60.A.7</p>      | <p>7. Step surfaces and platforms on mobile equipment shall be [skid resistant.</p>   | <p>* 7. <u>[If previously installed by the manufacturer, skid resistant</u> <del>S</del> step surfaces and platforms on mobile equipment shall be <del>[skid resistant properly maintained].</del></p>   | <p>Rationale: With regard to 16VAC25-73-60.A.7, Va. Code §40.1-22(5) provides in part that:</p> <p>“Such standards [as adopted by the Virginia Safety and Health Codes Board] when applicable to products which are distributed in interstate commerce shall be the same as federal standards unless deviations are required by compelling local conditions</p> |

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| <p>16VAC25-73-60.A.9</p> | <p>9. Riding or working outside or on top of units shall not be permitted unless the units are designed for that purpose or the operator is performing maintenance or inspection. Fall protection shall be provided for employees performing maintenance or inspection on top of units six feet or more above a lower level.</p> | <p>* 9. Riding or working outside or on top of units shall not be permitted unless the units are designed for that purpose or the operator is performing maintenance or inspection. Fall protection shall be provided for employees performing maintenance <del>[or inspection]</del> on top of units six feet or more above a lower level. <b><u>[Fall protection is not required when performing inspections on top of units six feet or more above a lower level.]</u></b></p> | <p>and do not unduly burden interstate commerce.”</p> <p>The requirement in 16VAC25-73-60.A.7 is a provision that could be interpreted to place a burden on manufacturers of covered mobile equipment to install skid resistant materials, and could therefore be covered by Va. Code §40.1-22(5). To avoid possible legal ramifications of this code section, the Department recommended language change.</p> <p>Rationale: Change made because “inspections” can be reasonably excluded from the requirement for fall protection, since the employee when mounting the vehicle will normally have the use of hands and feet for climbing as would be the case on a ladder (in fact, there is nothing in the proposed regulation that would prohibit the use of a ladder to conduct the inspection in lieu of climbing on the vehicle). There is also precedence in OSHA regulations for exempting employees from using fall protection while conducting inspections in 16 VAC 25-175-500(a)(1), Fall Protection (in Construction):</p> <p>“The provisions of this subpart do not apply when employees are making an inspection, investigation, or assessment of workplace conditions prior to the actual start of construction work or after all construction work has been completed.”</p> |
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| <p>16VAC25-73-60.B.3</p>  | <p>3. Booms, buckets, or any other part of the aerial device shall not be allowed to make contact or violate minimum approach distances with energized electrical conductors, poles, or similar conductive objects. See Table 2 of 16VAC25-73-50 or §§ 59.1-406 through 59.1-414 of the Code of Virginia (Overhead High Voltage Line Safety Act), as applicable.</p>  | <p>3. Booms, buckets, or any other part of the aerial device shall not be allowed to make contact or violate minimum approach distances with energized electrical conductors, poles, or similar conductive objects. See Table [1 2] of 16VAC25-73-50 or §§ 59.1-406 through 59.1-414 of the Code of Virginia (Overhead High Voltage Line Safety Act), as applicable.</p>   | <p>Rationale: Table 1 deleted from regulation and Table 2 redesignated as Table 1, see above.</p> |
| <p>16VAC25-73-60.B.20</p> | <p>20. During aerial device operations, arborists and other workers who are not qualified line-clearance arborists shall maintain a minimum approach distance from energized electrical conductors in accordance with Table 2 of 16VAC25-73-50. Only qualified line-clearance arborists or qualified line-clearance arborist trainees using an insulated aerial device may operate in accordance with minimum approach distances provided in Table 1.</p>                   | <p>20. During aerial device operations, arborists and other workers who are not qualified line-clearance arborists shall maintain a minimum approach distance from energized electrical conductors in accordance with Table [1 2] of 16VAC25-73-50. Only qualified line-clearance arborists or qualified line-clearance arborist trainees using an insulated aerial device may operate in accordance with minimum approach distances provided in Table 1.</p>  | <p>Rationale: Table 1 deleted from regulation and Table 2 redesignated as Table 1, see above.</p> |
| <p>16VAC25-73-60.G.3</p>  | <p>3. Operators of hoisting equipment shall be trained and shall maintain a minimum approach distance from energized conductors in accordance with Table 1 or 2 of 16VAC25-73-50, or §§ 59.1-406 through 59.1-414, Overhead High Voltage Line Safety Act, as applicable. A spotter shall be used when work is being performed in proximity to electrical conductors. Personnel assigned to work in proximity to the tree removal shall be trained and follow guidelines</p> | <p>3. Operators of hoisting equipment shall be trained and shall maintain a minimum approach distance from energized conductors in accordance with Table 1 [<del>or 2</del>] of 16VAC25-73-50, or §§ 59.1-406 through 59.1-414, Overhead High Voltage Line Safety Act, as applicable. A spotter shall be used when work is being performed in proximity to electrical conductors. Personnel assigned to work in proximity to the tree removal shall be trained and follow guidelines for electrical hazards (see 16VAC25-73-50).</p> | <p>Rationale: Table 1 deleted from regulation and Table 2 redesignated as Table 1, see above.</p> |

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| <p>16VAC25-73-90.A.9</p>  | <p>for electrical hazards (see 16VAC25-73-50).</p> <p>9. All components of a climbing system (e.g., ropes, pulleys, etc.) shall meet the manufacturer's design, specifications, and limitations. Components from different climbing systems shall not be combined without prior approval of the manufacturers.</p>   | <p>9. <del>[All components of a climbing system (e.g., ropes, pulleys, etc.) shall meet the manufacturer's design, specifications, and limitations. Components from different climbing systems shall not be combined without prior approval of the manufacturers. The qualified arborist shall assure that each component of the climbing system is approved by the manufacturer for its intended use as well as its compatibility with other components of the climbing system.]</del></p>  | <p>Rationale: Most manufacturers do not create complete "climbing systems" so components from different manufacturers inevitably have to be mixed. The change will increase the ease with which the regulation can be complied while still placing a positive requirement on employers to assure that components of the climbing system are being used for their intended purpose.</p> |
| <p>16VAC25-73-90.E.13</p> | <p>13. All workers other than the individual engaged in manual land-clearing operations shall be at least two tree lengths away from the tree or trunk being removed. This requirement does not apply in the presence of site restrictions, such as waterways or cliffs. Other arborists and workers shall be beyond the trees' striking range and at a distance as close to twice the tree's height as possible.</p> <p>NOTE: This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a certified arborist. Such activities are covered by 16VAC25-90-1910.266.</p> | <p>13. All workers other than the individual engaged in manual land-clearing operations shall be at least two tree lengths away from the tree or trunk being removed. This requirement does not apply in the presence of site restrictions, such as waterways or cliffs. Other arborists and workers shall be beyond the trees' striking range and at a distance as close to twice the tree's height as possible.</p> <p>NOTE: This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a <del>certified</del> <b>qualified</b> arborist. Such activities are covered by 16VAC25-90-1910.266.</p> | <p>Rationale: Remove language that references possession of a certification from the proposed definition of a "qualified arborist," to avoid possible restraint of trade issues and to limit costs of implementing the regulation.</p>   |



**Table 1.**  
**Minimum approach distances from energized conductors for qualified line-clearance arborists and qualified line-clearance arborist trainees.**

| Nominal voltage in kilovolts (kV) phase to phase | Includes 1910.269 elevation factor, sea level to 5,000 ft* |      | Includes 1910.269 elevation factor, 5,000–10,000 ft* |      | Includes 1910.269 elevation factor, 10,001–14,000 ft* |      |
|--|--|------|--|------|---|------|
|  | ft-in  | m    | ft-in  | M    | ft-in   | m    |
| 0.051 to 0.3                                     | Avoid contact  |      | Avoid contact  |      | Avoid contact   |      |
| 0.301 to 0.75                                    | 1-01   | 0.33 | 1-03   | 0.38 | 1-04  | 0.41 |
| 0.751 to 15.0                                    | 2-05   | 0.7  | 2-09   | 0.81 | 3-00  | 0.88 |
| 15.1 to 36.0                                     | 3-00   | 0.91 | 3-05   | 1.04 | 3-09  | 1    |
| 36.1 to 46.0                                     | 3-04   | 1.01 | 3-10   | 1.16 | 4-02  | 1.09 |
| 46.1 to 72.5                                     | 4-02   | 1.26 | 4-09   | 1.44 | 5-02  | 1.3  |
| 72.6 to 121.0                                    | 4-06   | 1.36 | 5-02   | 1.55 | 5-07  | 1.68 |
| 138.0 to 145.0                                   | 5-02   | 1.58 | 5-11   | 1.8  | 6-05  | 1.96 |
| 161.0 to 169.0                                   | 6-00   | 1.8  | 6-10   | 2.06 | 7-05  | 2.23 |
| 230.0 to 242.0                                   | 7-11   | 2.39 | 9-00   | 2.73 | 9-09  | 2.95 |
| 345.0 to 362.0                                   | 13-02  | 3.99 | 15-00  | 4.56 | 16-03   | 4.94 |
| 500.0 to 550.0                                   | 19-00  | 5.78 | 21-09  | 6.6  | 23-07   | 7.16 |

|                           |                  |                 |                  |                |                  |                  |
|---------------------------|------------------|-----------------|------------------|----------------|------------------|------------------|
| <del>765.0 to 800.0</del> | <del>27-04</del> | <del>8.31</del> | <del>31-03</del> | <del>9.5</del> | <del>33-10</del> | <del>10.29</del> |
|---------------------------|------------------|-----------------|------------------|----------------|------------------|------------------|

~~\*Exceeds phase to ground; elevation factor per 29 CFR 1910.269.~~

~~Note: At time of publication, the minimum approach distances in this table for voltages between 301 and 1,000 volts exceed those specified by 29 CFR 1910.269.]~~

**Table [2. 1.]**

Minimum approach distances to energized conductors for persons other than qualified line-clearance arborists and qualified line-clearance arborist trainees

| Nominal voltage<br>in kilovolts (kV)<br>phase to phase* | Distance |       |
|---|----------|-------|
|   | ft-in    | m     |
| 0.0 to 1.0  | 10-00    | 3.05  |
| 1.1 to 15.0   | 10-00    | 3.05  |
| 15.1 to 36.0  | 10-00    | 3.05  |
| 36.1 to 50.0  | 10-00    | 3.05  |
| 50.1 to 72.5  | 10-09    | 3.28  |
| 72.6 to 121.0   | 12-04    | 3.76  |
| 138.0 to 145.0  | 13-02    | 4     |
| 161.0 to 169.0  | 14-00    | 4.24  |
| 230.0 to 242.0  | 16-05    | 4.97  |
| 345.0 to 362.0  | 20-05    | 6.17  |
| 500.0 to 550.0  | 26-08    | 8.05  |
| 785.0 to 800.0  | 35-00    | 10.55 |

\*Exceeds phase to ground per 29 CFR 1910.333.

**Public comment**

*Please summarize all comments received during the public comment period following the publication of the proposed stage, and provide the agency response. If no comment was received, please so indicate.*

| Commenter | Comment                               | Agency response |
|-----------|---------------------------------------|-----------------|
|           | The Board adopted proposed regulatory |                 |

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| <p><b>Commenter 1:<br/>April 16, 2009,<br/>Public Hearing:</b><br/>Kevin Forgue,<br/>Asplundh Tree<br/>Expert Company</p> | <p>language on July 10, 2008. The proposed regulation was published on March 16, 2009, with a 60-day comment period ending on May 15, 2009. A public hearing was held by the Board on April 16, 2009. The results of the 60 day comment period and public hearing are summarized below.</p> <p>“Asplundh is a vegetation management company with over 28,000 employees in the United States, Canada, Australia and New Zealand. Asplundh offers a variety of services, including line-clearance tree trimming performed for electric utilities....Asplundh has a regular safety training program for new employees. Asplundh’s employees in the field also receive ongoing training, including toolbox talks, professional development programs, and on-the-job training for new techniques. Asplundh is firmly committed to the safety of its employees and applauds Virginia for considering a tree care regulation.</p> <p>Written comments regarding the proposal will be filed on or before May 15. As such, Asplundh is not providing detailed comments at this time regarding the substance of the proposal, such as the fall protection, traffic control, first aid, and other provisions. At the same time, Asplundh has a global comment about the proposal as a whole.</p> <p>Line-clearance tree trimming is already regulated under OSHA federal standard 1910.269, which Virginia has adopted. Based on the language in the proposal,</p> | <p><b>Agency Response:</b></p> <p>The Department received four major comments on the application of the proposed Tree Trimming Operations regulation to line-clearance tree trimming and will address the issue later in this document, under <b>Commenter 4</b>.</p> <p>In addition, it should be noted that it has been the Department’s stated intent, at the request of the tree trimming industry, to use as much of ANSI Z133.1-2006 as possible because of the familiarity of the industry with the national consensus standard, to limit costs of compliance as much as possible, to aid in ease of developing standardized training programs, to ease the burdens of compliance as much as possible for multi-state employers, and because it represents the input of many varied interest groups, including employer representatives, employee representatives, government agencies, public utility companies, safety professionals and others. In fact, Asplundh was a participant in the development of ANSI Z133.1-2006. The Department made no initial attempt to change the scope or application of the proposed regulation with regard to line-clearance tree trimming with the understanding that the industry did not have any significant concerns with ANSI Z133.1-2006, but is willing to do so now to address more recent concerns that have apparently developed since its adoption in 2006.</p> |
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<sup>1</sup> Dr. John Ball, South Dakota State University, personal communication. Dr. Ball has conducted a multiple-year study of accidents in the arborist profession.

<sup>2</sup> *Fact Sheet: Non-Fatal Occupational Injuries in the Landscape Services Industries*. Published by Department of Health and Human Services, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, 4676 Columbia Parkway, Cincinnati, OH 45226-1998.

<sup>3</sup> *Work-Related Fatalities Associated with Tree Care Operations — United States, 1992–2007*. Morbidity and Mortality Weekly Report ([www.cdc.gov/mmwr](http://www.cdc.gov/mmwr)), Vol. 58, No. 15. April 24, 2009.

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| <p><b>Commenter 2:<br/>April 16, 2009,<br/>Public Hearing<br/>and Written<br/>Comment:</b><br/>Samuel R.<br/>Brumberg,<br/>LeClair, Ryan;<br/>representing the<br/>Virginia,<br/>Maryland and<br/>Delaware<br/>Association of<br/>Electric<br/>Cooperatives</p> | <p>Virginia has not considered or evaluated the impact of adopting a second industry-specific regulation applicable to line-clearance tree trimming. Specifically, line-clearance tree trimming would apparently be the only industry required to comply with two separate vertical standards, and it is not clear whether Virginia has considered how to reconcile the standards so as to make the compliance obligations transparent to employers. This is in contrast to the logging industry, which is governed by 1910.266 and would clearly be exempt from the tree care regulation. As such, the logging industry will continue to be covered by a single vertical standard, which we believe is the most appropriate way to regulate a specific industry.</p> <p>Asplundh understands that there may be a need for a regulation covering residential and commercial tree trimming work since the logging standard is clearly not intended for this purpose. Given, however, that line-clearance tree trimming work is already regulated under 1910.269, we ask that Virginia consider whether additional regulation is needed. If Virginia concludes that it is, then we suggest Virginia include provisions applicable to line-clearance tree trimming in a separate section of the standard.”</p> <p><u>Public Hearing Comment, April 16, 2009:</u></p> <p>“The cooperatives are, first and foremost, consumer organizations owned and controlled by the customers they serve. They are not-for-profit and are focused solely on providing reliable service at the lowest possible cost in a way that advances environmental stewardship. There are thirteen electric cooperatives in Virginia serving approximately 450,000 electric meters, representing over 1 million Virginia consumers. As not-for-profit electric – as they are not-for-profit organizations, electric cooperatives distribute</p> | <p><b>Agency Response:</b></p> <p>The Department received four major comments on the application of the proposed Tree Trimming Operations regulation to line-clearance tree trimming and will address the issue later in this document, under <b>Commenter 4</b>.</p> <p>With regard to a broader exemption that would cover all electric utility operations performed by both cooperatives and large utility companies, the Department agrees that additional language in the Applicability section of the proposed regulation would help to clear up any confusion. The Department generally agrees that 16 VAC 25-90-269, Electric power generation, transmission, and distribution, should remain the primary regulation</p> |
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|  | <p>electricity to their members who are charged on a cost-based rate with no additional margin or markup, so the cooperatives are particularly sensitive to costs which might raise the monthly electric bill for rural consumers and for Virginia’s farmers.</p> <p>The reason I wanted to address you about the tree trimming regulation, in particular is that the cooperatives are eager to obtain an exemption similar to the one already put in paragraph C for logging operations. We feel as though the work that’s done incidental to right-of-way maintenance or electric utility operations probably should not be covered in the regulation applicable to professional tree service companies. My concern, in reading the regulation, would be that it’s possible that the cooperatives might come under this regulation if it were not absolutely clear that they did not.</p> <p>The cooperatives are heavily regulated by the state and by the federal government’s utility service. These regulations govern almost every aspect of their operation, including right-of-way maintenance, and so the cooperatives are concerned about duplicative costs where the safety system that’s in place is already functioning well.</p> <p>Across the thirteen cooperatives there are – there’s a mixed system of how the tree trimming part of the right-of-way maintenance happens. Some of that is done by in-house lineman and utility folks. Some of that is contracted to professional tree trimming companies. And clearly, what I’m advocating here would not be applicable – you know, .there would be no exemption just because a professional tree trimming company would be working for the cooperative , but it would cover the cooperative’s in-house operations. And then there [are a] certain number of cooperatives that have a mixed operation, some contract, some done in-house.</p> | <p>applicable to the industry, whenever exposure to tree-related electrical hazards covered by that regulation are present.</p> <p>However, there are at least three tree-related activities not directly addressed by 16 VAC 25-90-269, for which further clarification is needed. These activities present hazards to employees which need to be addressed by either the proposed regulation or the Logging Standard, 16 VAC 25-90-266, to assure similarly situated employees are provided equivalent protections, no matter what the tree trimming/removal activity involves. This regulatory coverage is needed, because although 16 VAC 25-90-269 contains requirements in some areas that are covered by the proposed regulation (e.g., Brush chippers, Sprayers and related equipment, Stump cutters, Rope, Fall protection), the regulation is silent on such essential requirements as Climbing and tie-in requirements, Rigging, and Tree Removal, all of which come into play in the following tree trimming/removal activities:</p> <ol style="list-style-type: none"> <li>1. Right-of-way clearance for <b>new</b> power generation, transmission and distribution lines, where no exposure to electrical lines is present.</li> <li>2. Land clearing activities associated with the construction of new power generation, transmission and distribution facilities, where no exposure to electrical lines in present.</li> <li>3. Tree trimming operations around buildings, offices, facilities owned or operated by the cooperatives or other utility companies, where no exposure to electrical lines is present.</li> </ol> <p>Section 16 VAC 25-73-10.C. currently addresses tree removal activities where the primary objective is land clearing in preparation for construction, real estate development or other related activities, and makes clear that such activities are exempt from the proposed regulation and covered by the Logging Standard, 16 VAC 25-90-266; unless the tree removal activities are directly supervised by a qualified arborist, in which case the proposed regulation would still apply. The exemption as currently drafted clearly addresses <b>item 2</b> above and would offer the described options for compliance to the cooperatives and utility companies without further change.</p> <p>The Department recommends addressing <b>item 1</b> above by adding the following language to 16 VAC</p> |
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|  | <p>So, simply for clarity’s sake, I would advocate an additional sentence be added to paragraph C similar to the exemptions already there for logging operation[s], construction/real estate development, etc., and would cover all electric utility operations performed by both the cooperatives and large utilities, like Dominion Virginia Power, who also has comprehensive safety programs.”<br/> <u>Written Comment, May 14, 2009:</u></p> <p>“I write on behalf of the Virginia, Maryland, and Delaware Association of Electric Cooperatives. The Association is an organization whose members are the Virginia, Maryland, and Delaware electric distribution cooperatives. In Virginia, the cooperatives serve approximately 450,000 electric meters and over one million individual consumers. The cooperatives are different from for-profit businesses in that they are owned by their members—by those they serve—and controlled a board of directors elected from among the members. The cooperatives seek to provide reliable electric service at the lowest reasonable cost in a way that advances environmental stewardship.</p> <p>I spoke before the Safety and Health Codes Board at its meeting on April 16, 2009, and want to reiterate the comments I made at the public hearing on behalf of the Association. Specifically, the Association, on behalf of its members, would respectfully request an exemption from the Proposed Rule be added to paragraph 16 VAC 25-73-10(C), so that no potential ambiguity will result as to the Proposed Rule’s intended scope. We understand that the Proposed Rule was originally intended to govern operations of professional tree trimming companies and not electric utilities. As one proposal an exemption similar to that for logging operations could be added to the paragraph on scope and applicability: “This regulation does not apply to electric utility operations conducted by public service</p> | <p>25-73-10.C:<br/>         ....<br/>         “This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, <b><u>right-of-ways for new utility installations</u></b>, or other related activities, unless directly supervised by a qualified arborist. Such activities are covered by 16VAC25-90-1910.266.</p> <p>With regard to <b>item 3</b> above, such activities clearly fall under the current scope of the proposed regulation, regardless of whether the tree trimming work is done by a subcontractor to the cooperative or utility company, or by their own employees, so no additional change to the proposed regulation is necessary.</p> |
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| <p><b>Commenter 3:</b><br/> <b>May 13, 2009,</b><br/>                 Cynthia Mills,<br/>                 CAE, CMC,<br/>                 President and<br/>                 CEO, Tree Care<br/>                 Industry<br/>                 Association</p> | <p>corporations or their equivalent.”</p> <p>The cooperatives are regulated at various levels, including by the U.S. Department of Agriculture’s Rural Utilities Service and the Virginia State Corporation Commission. In addition, tree trimming work, when performed by electric utilities in Virginia, complies with federal OSHA requirements, <i>see</i> 29 C.F.R. § 1910.269(r), and American National Standards Institute standard Z133.1. The cooperatives have a variety of tree trimming operations: some have an arborist on staff and conduct all trimming in-house, others use all outside contractors, still others use a hybrid arrangement somewhere in between the two. Whatever the case, utility tree trimming operations in Virginia are guided by standards set forth by the Division of Energy Regulation of the State Corporation Commission. The cooperatives respectfully submit that safety requirements for right-of-way maintenance and other utility operations are adequately regulated outside the scope of the Proposed Rule.”</p> <p>“The Tree Care Industry Association, Inc. (TCIA) enthusiastically supports the development of a VOSH Standard for tree care operations that is derived from the most recent revision of the ANSI Z133.1, the American National Standard for Arboricultural Operations – Safety Requirements (Z133).</p> <p>TCIA (formerly the National Arborist Association or NAA) is a trade association whose members are tree care companies. As of April 30, we represent 67 companies headquartered in Virginia as well as about eight to 10 regional/national companies with operations there, all of whom have a direct and material interest in this standard.</p> <p>In June 2008, at VOSH’s invitation, we very willingly assembled a delegation of Virginia TCIA members to help VOSH refine the proposed standard,</p> | <p><b>Agency Response:</b> None.</p> |
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|  | <p>and we are generally very pleased with the result.</p> <p>It is important for VOSH to understand the “community” it intends to regulate. Our typical member employs eight full-time “arborists” in its field force. There are estimated to be as many as 300,000 people in the Arboriculture profession in the U.S.<sup>1</sup>, so obviously the industry is comprised of many, many very small businesses.</p> <p>Within the arborist profession, one can delineate two broad types of employer, the utility line clearance contractor and the residential/commercial tree care firm. While it is instructive to understand the differences in the work, it is an oversimplification to assume that all employers fall entirely into one class or the other.</p> <p>1. The utility line clearance contractor, or utility vegetation management company, as it is sometimes referred to, works for the utility owner or operator to trim trees and maintain vegetation around overhead conductors or in utility corridors. A relatively small number of employers engage in line clearance. Although fewer in number, these tend to be larger employers. In TCIA’s membership, the median number of employees in a company that does one-half or more of its work for utilities is 20, as compared to a median of eight employees for all companies surveyed. Our largest utility line clearance tree trimming members each employ thousands. In Virginia, line clearance contractors are already covered by a relatively contemporary and stringent Vertical Standard, 29 CFR §1910.269.</p> <p>2. The other type of employer is the residential/commercial tree care firm that prunes and otherwise cares for trees on residential and commercial properties. Significantly, some companies that work primarily in residential/commercial also perform limited utility line clearance and as such are regulated by 1910.269.</p> |  |
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|  | <p>Otherwise, in Virginia the residential/commercial tree care company is covered by general industry standards as well as the Virginia Overhead High Voltage Line Safety Act.</p> <p>Regardless of the type of arboriculture performed, there is important general information about the tree care industry that should inform this rule-making process:</p> <ul style="list-style-type: none"> <li>• Definitive data on how many companies do tree work is unavailable; however we can state with confidence that there are at least 17,000 such companies nationally and at least 750 in Virginia. Ninety-eight percent of our members perform tree trimming and/or removal, and these services combined make up almost 86 percent of their business volume. Other tree care-related operations include: tree fertilization, pesticide application, and cabling and bracing. The most significant tasks and their attendant hazard(s) are summarized in Table 1.</li> <li>• The occupation is fraught with hazard leading to very high injury statistics. Recent reports from the Centers for Disease Control and Prevention (CDC)/NIOSH<sup>2,3</sup> corroborate VOSH’s historical data on fatal accidents by illustrating that both days away from work (DAFW) and fatal accident statistics for tree care occupations are significantly higher than in most other industrial sectors.</li> <li>• Private sector tree care businesses are plagued with an unusually high employee turnover rate.</li> <li>• The Morbidity and Mortality Weekly Report from CDC cites insufficient training as a key contributor to worker accidents in the tree care industry.</li> <li>• The tree care industry has had the constructive guidance of the ANSI Z133.1 available to it since 1972. The Z133 Committee has diligently updated the Standard keeping it abreast of improvements in technology and knowledge.</li> </ul> |  |
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| <p><b><u>Commenter 3, Continued:</u></b></p> | <p>The existing patchwork of standards that VOSH is compelled to use to regulate our industry is insufficient and confusing to practitioners and enforcers. In the past, we have expressed our concerns about the application of Logging Standard (29 CFR §1910.266) to tree trimming and removal operations. The reality is that logging and tree care are two separate professions, and most equipment and methods used in these respective professions are quite different. Therefore, an “Arborist Standard” is in the best interests of our industry and VOSH in its safety oversight role.”</p> <p><b>“Economic Impact of this Proposal</b></p> <p>Generally speaking, employers in the tree care industry, including line clearance tree trimming contractors, will have to familiarize themselves with the requirements of any new regulation and train employees on its requirements. However, because the proposed regulation is very closely based on the extant revision of ANSI Z133.1, a standard that has been available to the industry since 1972, the cost of compliance should be negligible, since theoretically companies should already comply with Z133.</p> <p>There is one concern we would like to register with the practical implementation of another proposed regulation, 16VAC25-95, which is incorporated by reference at 16VAC25-73-40(C)(5). It calls for at least one CPR/first aid trained individual to be available to the crew at every work site.</p> <p>Our industry’s average annual employee turnover is 30 percent, and employee absenteeism on any given day can be very high. Furthermore, there is a strong seasonal fluctuation in the volume of work and hence the size of the workforce. Because of these factors, the strict enforcement of 16VAC25-95 has the unintended</p> | <p><b>Agency Response:</b></p> <p>The Department addressed the issue of unforeseen employee absences in the rulemaking for its proposed regulations, 16 VAC 25-95, Medical Services and First Aid Standards for General Industry, and for 16 VAC 25-177, Medical Services and First Aid Standards for the Construction Industry:</p> <p>“With regard to a situation when an employer is faced with an unforeseen situation, for example when a first aid trained employee is late for work, calls in sick, or changes jobs; or a foreseeable situation when a first aid trained employee is on vacation, the Department will review those situations on a case-by-case basis. As with any VOSH inspection, in deciding whether or not to take enforcement action, the Department will take into account mitigating circumstances (e.g., sickness, job changes, cancellation of scheduled first aid classes, etc.). The final regulation was purposely drafted to allow employer’s some level of flexibility in achieving compliance, and as with all VOSH regulations, each employer must determine how it can most effectively and efficiently meet the requirements of the final regulation.”</p> <p>The Department is cognizant of the fact that when a new employee is hired, it will be difficult for an employer to obtain immediate first aid/CPR training for the individual, and is also aware of the historical problems that the tree care and logging industries have experienced with employee turnover, as this excerpt from VOSH Directive 06-</p> |
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|  | <p>consequence of imposing a severe economic hardship, especially to the small employer in tree care.</p> <p>For example, if the typical company (with a field workforce of eight) employs three first aid/CPR trained employees to work on different crews and one does not show up for work on Monday morning, the company may be forced to send one-third of its workforce home, because it cannot assemble a compliant crew. Alternately, if because of business volume this same company decides that it must field an additional crew, it is prevented from doing so until it can train another employee in first aid/CPR.</p> <p>Turnover tends to happen within 30-60 days of hire, so it would be reasonable and workable if the employer can be exempted from the one-trained-person-per-crew requirement by documenting that it initiates first aid/CPR training for all full-time crew personnel within two months (60 days) of hire.</p> <p>There is precedent for an exemption in the Vertical Standard at 1910.269(b)(1)(i): “For field work involving two or more employees at a work location, at least two trained persons shall be available. However, only one trained person need be available if all new employees are trained in first aid, including CPR, within 3 months of their hiring dates.””</p> | <p>009, Applicability of the Logging Standard, §1910.266, to Arborists, demonstrates:</p> <p>“[NOTE: Day laborers working in a logging operation for an arborist do not have to be trained in first aid if they are not using machines and are doing clean-up work]”</p> <p>However, the Department also believes it is unlikely that tree trimming companies are the only employers who will encounter turnover problems on the scale suffered by the tree trimming industry as a whole. Turnover rates can vary depending on the time of year, the labor supply, the general economic conditions in the locality or region and for other reasons. Accordingly, the Department is concerned about giving any exemption from the First Aid/CPR regulations that could “swallow the rule.”</p> <p>The final regulation on Medical Services and First Aid in General Industry is currently undergoing Executive Branch review. The relevant sections of that regulation provide as follows:</p> <p>16 VAC 25-95<br/>....<br/>“D. Covered employers are permitted to make written arrangements with and reasonably rely on another contractor or employer on the same job site or establishment to provide selected employees to serve as first aid and CPR responders for employees of the covered employer.</p> <p>E. Employers of mobile work crews (i.e., crews that travel to more than one worksite per day) of two or more employees that assign employees to travel to worksites or engage in work activities that could potentially expose those employees to serious physical harm or death shall either:</p> <ol style="list-style-type: none"> <li>1. assure that at least one employee on the mobile crew is selected and adequately trained to administer first aid and CPR during all workshifts; or</li> <li>2. comply with section D. above.”</li> </ol> <p>The Commenter’s suggested exemption is not one that would “swallow the rule”, since it could result in a tree trimming employer having more than one person trained on first aid/CPR on any given work crew, and appears to be a reasonable compromise to address the industry’s historically well-documented concern about turnover rates. However, the</p> |
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| <p><b><u>Commenter 3, Continued:</u></b></p> | <p>“Specific concerns listed in order of their occurrence</p> <p><b>16VAC25-73-10(C).</b> The latter part of the statement should be revised. Our suggested new language is underlined: This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a qualified arborist <u>or qualified line clearance arborist.</u></p> <p>One would probably infer that the original reference to “qualified arborist” encompasses the qualified line</p> | <p>Department has also encountered situations during inspections of tree trimming companies where an employee will work for 3-4 weeks at a time, take a few weeks off to work another job or not work at all, and then go back to the same tree trimming company for another 5-6 weeks, etc. Such an employee would not normally fit a standard definition for “full-time employee” but nonetheless can work significant hours for an individual tree trimming company. Obviously, an individual work crew composed of such employees would always fall outside the language proposed by the Commenter. Accordingly, the Department prefers the use of the term “new employee” instead of “full-time employee” (the term “new employee” is used in 1910.269(b)(1)(i), referenced by the Commenter above).</p> <p>Accordingly, the following change to the regulatory language is recommended to address the above issues. [NOTE: §16 VAC 25-95.E.1. is referenced because tree trimming crews meet the criteria for “mobile work crews” under the First Aid/CPR final regulation.]:</p> <p>16 VAC 25-73-40.C.5:</p> <p><b><u>“5. Cardiopulmonary resuscitation (CPR) and first-aid training shall be provided in accordance with 16VAC25-95. <u>An employer is exempted from complying with 16 VAC 25-95.E.1 if it can document in writing that it initiated first-aid/CPR training for all new crew personnel within two months (60 days) of hire, or whenever a previously employed person has accumulated forty-five (45) work days for the same employer during the previous year.”</u></u></b></p> <p><b>Agency Response:</b></p> <p>The Department agrees with the Commenter’s proposed language change and recommends the following change to the regulatory language:</p> <p>16 VAC 25-73-10.C.</p> <p>“C.</p> <p>....</p> <p>This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a qualified arborist <b>or</b></p> |
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|  | <p>clearance arborist; but since the latter term is separately defined in the proposal, it should be made unmistakably clear that either a qualified arborist or a qualified line clearance arborist may supervise a land clearing operation, making said operation subject to the proposed standard.”</p>  | <p><b>qualified line-clearance arborist.</b> Such activities are covered by 16VAC25-90-1910.266.</p>   |
| <p><b><u>Commenter 3, Continued:</u></b></p> | <p>“16VAC25-73-10(C). Being derived from Z133, the proposed standard contains language gleaned from a variety of OSHA and ANSI standards, including 1910.269 and 1910.331-335. To be sure, there is similar and in some cases identical language in 1910.269 and this document that could lead to confusion in the regulated community and particularly among line clearance tree trimmers. Our aim is to reduce or eliminate any confusion for all parties with a concise statement. We recommend that the following be added to the end of 16VAC25-73-10(C): <u>Line clearance tree trimming operations, as defined in this regulation, are subject to the requirements of 1910.269 paragraphs (a)(2), (b), (c), (g), (k), (p) and (r) as well as this regulation. Where this regulation and 1910.269 contain similar requirements, the qualified line clearance tree trimmer shall follow the requirements of 1910.269.</u>”</p> | <p><b>Agency Response:</b></p> <p>The Department received four major comments on the application of the proposed Tree Trimming Operations regulation to line-clearance tree trimming and will address the issue later in this document under <b>Commenter 4.</b></p>   |
| <p><b><u>Commenter 3, Continued:</u></b></p> | <p>“16VAC25-73-20. "Job briefing" is defined as the communication of at least the following subjects for arboricultural operations: hazards associated with the job, work procedures involved, special precautions, electrical hazards, job assignments, and personal protective equipment.</p> <p>In order to make the goals of the job briefing achievable for the employer and enforceable for VOSH, the wording must be changed to “<u>known</u> hazards associated with the job” or “<u>recognizable</u> hazards associated with the job.”</p>   | <p><b>Agency Response:</b></p> <p>The Department does not recommend any changes to the proposed regulation in response to the Commenter’s suggested language changes. A long line of court decisions provide that the Department, in order to uphold any citation issued to an employer, must demonstrate that the employer “knew or should have known” of the violative condition. That case law precedent applies to any potential violation that could be cited under the proposed regulation, so there is no need to add such language to a specific provision in the regulatory text.</p> |

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| <p><b><u>Commenter 3,</u></b><br/><b><u>Continued:</u></b></p> | <p><b>16VAC25-73-60(A)(9).</b> The second sentence of this paragraph, “Fall protection shall be provided for employees performing maintenance or inspection on top of units six feet or more above a lower level,” does not appear in the ANSI Z133 Standard, and for good reason. The dilemma centers on aerial lift devices with what are called cab guards or “headache racks.”</p> <p>The cab guard is primarily to protect the truck cab and any occupants from falling debris. Secondarily on some units, the operator must take one or two steps on the top of the cab guard to climb into the bucket. Most lift manufacturers and employers require the lift operator to perform a brief visual inspection of the upper boom’s critical components and again, this brief inspection is performed from the top of the cab guard.</p> <p>Whether alighting into the bucket or performing the brief inspection, there is no feasible form of fall protection that can be provided. Guardrails on top of the cab guard interfere with the boom’s rotation and could easily cause catastrophic damage to the boom or bucket. The fall restraint or fall arrest device has not yet been invented that would allow the operator the necessary mobility to perform the safety inspection and prevent the operator from contact with some lower level, including the road surface.</p> <p>The current language of Z133 from which this is borrowed minimizes any risk to a negligible level, akin to climbing a ladder. Work shall not be performed from the top of the cab guard. Certainly we would agree that if inspection or maintenance that must be performed is more extensive than a very brief, visual inspection, then the employer must make provisions for fall protection.</p> <p>The second sentence of the proposed 16VAC25-73-60(A)(9) must be stricken.</p> | <p><b>Agency Response:</b></p> <p>The Department agrees in part and disagrees in part with the Commenter’s suggested language changes.</p> <p>First, the Department notes that the provision in question applies to all vehicles and mobile equipment, so deleting the suggested language merely to address a concern about aerial lift devices, unnecessarily weakens employee fall protection requirements.</p> <p>Second, the Department agrees that inspections can be reasonably excluded from the requirement for fall protection, since the employee when mounting the vehicle will normally have the use of hands and feet for climbing as would be the case on a ladder (in fact, there is nothing in the proposed regulation that would prohibit the use of a ladder to conduct the inspection in lieu of climbing on the vehicle). There is also precedence in OSHA regulations for exempting employees from using fall protection while conducting inspections in 16 VAC 25-175-500(a)(1), Fall Protection (in Construction):</p> <p>“The provisions of this subpart do not apply when employees are making an inspection, investigation, or assessment of workplace conditions prior to the actual start of construction work or after all construction work has been completed.”</p> <p>OSHA explained this exception to the general fall protection requirements in the preamble to the regulation:</p> <p>“OSHA has set this exception because employees engaged in inspecting, investigating and assessing workplace conditions before the actual work begins or after work has been completed are exposed to fall hazards for very short durations, if at all, since they most likely would be able to accomplish their work without going near the danger zone. Also, the Agency’s experience is that such individuals who are not continually or routinely exposed to fall hazards tend to be very focused on their footing, ever alert and aware of the hazards associated with falling. These practical considerations would make it unreasonable, the Agency believes, to require the installation of fall protection systems either prior to the start of construction work or after such work has been completed. Such requirements would impose an unreasonable burden on employers without demonstrable benefits.</p> |
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| <p><b><u>Commenter 3,</u></b><br/><b><u>Continued:</u></b></p> | <p>“16VAC25-73-60(G)(9). We take exception solely to the phrase, “...if the</p> | <p>OSHA notes that the operations covered by paragraph (a)(1) are normally conducted in good weather, that the nature of such work normally exposes the employee to the fall hazard only for a short time, if at all, and that requiring the installation of fall protection systems under such circumstances would expose the employee who installs those systems to falling hazards for a longer time than the person performing an inspection or similar work. In addition, OSHA anticipates that employees who inspect, investigate or assess workplace conditions will be more aware of their proximity to an unprotected edge than, for example, a roofer who is moving backwards while operating a felt laying machine, or a plumber whose attention is on overhead pipe and not on the floor edge.”</p> <p>59 Fed. Reg. 40672-40753</p> <p>Third, while inspections can be classified as potentially of short duration, maintenance activities cannot be routinely assumed to be of short duration. Maintenance activities also involve employees using their hands to do the actual maintenance work, instead of being able to use their hands to hold onto parts of the vehicle/equipment to avoid falls. Accordingly, the Department does not recommend that fall protection requirements be eliminated for maintenance activities. As referenced above, there is nothing to prohibit an employer from allowing its employees to use ladders, scaffolds, scissor lifts, etc., for maintenance activities, all of which would avoid the need for guard rails or a personal fall arrest system by the employee.</p> <p>The Department recommends the following change to the regulatory language:</p> <p>16 VAC 25-73-60.A.9.</p> <p>“9. Riding or working outside or on top of units shall not be permitted unless the units are designed for that purpose or the operator is performing maintenance or inspection. Fall protection shall be provided for employees performing maintenance <del>or inspection</del> on top of units six feet or more above a lower level. <b><u>Fall protection is not required when performing inspections on top of units six feet or more above a lower level.</u></b>”</p> <p><b>Agency Response:</b></p> |
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|  | <p>crane manufacturer's specifications and limitations do not prohibit such use.” This one short phrase completely undermines the purpose of the remainder of (G)(9).</p> <p>ANSI Z133.1 provides VOSH with the most contemporary, most realistic and safest guidance for arborist operations employing cranes, bar none. As VOSH already knows, ANSI Z133.1-2006 contains provisions allowing the use of a crane to lift (hoist) a qualified arborist, using an arborist climbing line and arborist saddle, and secured to a designated anchor point on the boom line or crane. The standard goes on to lay out two pages of requirements that must be met by the overall crane operation before the climber can be hoisted, all of which VOSH proposes to adopt.</p> <p>By contrast, OSHA general industry regulation and other crane standards prohibit lifting a worker on the load line, but are silent with respect to the circumstances faced by arborists with the removal of trees too dangerous to climb, because such circumstances were not considered when these documents were drafted.</p> <p>Specifically, the arborists’ practice of being hoisted by a crane has been deemed to be contrary to 29 CFR §1910.180, Crawler, Locomotive and Truck Cranes. However, we are convinced that this guidance, when it was written over 30 years ago, was intended to prevent a worker from placing his foot into the crane hook, grabbing the load line and being hoisted into the air. That practice bears no semblance whatsoever to the carefully controlled, safe work practice utilized by arborists.</p> <p>Paradoxically, if crane manufacturer’s operating guidelines address the practice at all, they mimic §1910.180 or other outdated and inappropriate guidance on the matter.</p> <p>This concern of hoisting a worker with</p> | <p>The Department respectfully disagrees with the Commenter’s recommendation that the regulation be amended to permit an employer to use a crane contrary to it’s manufacturer’s specifications and limitations:</p> <p>First, the Department disagrees with the Commenter’s assertion that the language cited “completely undermines the purpose of the remainder of (G)(9).” That would only be accurate if all crane manufacturer’s prohibited the practice, but the Department has no information to indicate that is the case. Even the commenter notes “Paradoxically, if crane manufacturer’s operating guidelines address the practice at all, they mimic §1910.180 or other outdated and inappropriate guidance on the matter,” which certainly implies that some manufacturers do not address the practice in their crane manuals. If a manufacturer does not reference the practice, then the employer can proceed with using a crane under the conditions listed in 16VAC25-73-60.G.9.</p> <p>Second, it is longstanding policy of the Department to require employers to comply with manufacturer’s specifications and limitations during the use of vehicles, equipment, machinery, tools, etc., through the use of the “General Duty Clause” (Va. Code §40.1-51.1(a)); specific requirements in existing OSHA standards (e.g., 1926.550(a)(1)), and more recently through VOSH regulation §16 VAC 25-60-120, which provides:</p> <p>“The employer shall comply with the manufacturer’s specifications and limitations applicable to the operation, training, use, installation, inspection, testing, repair and maintenance of all machinery, vehicles, tools, materials and equipment; unless specifically superseded by a more stringent corresponding requirement in Part 1910. The use of any machinery, vehicle, tool, material or equipment which is not in compliance with any applicable requirement of the manufacturer is prohibited, and shall either be identified by the employer as unsafe by tagging or locking the controls to render them inoperable, or be physically removed from its place of use or operation.”</p> <p>It simply is not the policy of the Department to sanction through regulation a practice that would abrogate a manufacturer’s specifications and limitations on the safe use of its machinery, vehicles, tools, materials and equipment. If, as the Commenter suggests, the manufacturer’s limitations</p> |
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|  | <p>a crane has been recognized repeatedly by both federal and state agencies, as well as industry professionals. For example, in 1993, Mr. Roy Gurnham of the Directorate of Construction issued a letter of interpretation stating that “OSHA has already determined that when the use of a conventional means of access to an elevated worksite would be impossible or more hazardous, a violation of 1910.180(h)(3)(v) will be treated as de minimis if the employer has complied with the provisions set forth in 1926.550(g)(3), 1926.550(g)(4), 1926.550(g)(5), 1926.550(g)(6), 1926.550(g)(7) and 1926.550(g)(8).” The exception that OSHA made was to allow the use of a personnel basket, sometimes called a man-cage, to hoist workers, under construction conditions, on the load line. With this interpretation, OSHA made an important exception to a dated rule that benefited worker safety.</p> <p>Our industry has attempted to use man-cages to enter trees under certain conditions, but at times the man-cage can actually place the tree worker in an extremely hazardous situation. Often, the lack of balance as well as the interference from the cables and metal structure while attempting to use a chain saw creates a situation that increases risk, even jeopardizing the lives of the workers. It is, in part, for these reasons that our industry’s safety professionals developed procedures for tying into a crane above the headache ball or on a clevis near the jib or boom tip with an arborist saddle and climbing line meeting ANSI Z133 requirements. As an industry, we have been using cranes this way for almost 50 years <u>with no fatalities</u>.</p> <p>This practice was recognized and condoned by California OSHA in 2004 when it adopted an emergency amendment, which subsequently became a permanent regulation, in their tree access standard, Title 8, Section 3427. Their original justification was:</p> <p>“[f]or the preservation of the public</p> | <p>are based on outdated ideas, and safety of the employees being lifted is no longer a concern, it is up to the industry to reach out to the manufacturers to get those limitations changed.</p> |
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|  | <p>safety and the safety of the affected workforce, it is necessary to immediately adopt standards that would prescribe a safe alternative means and method to access trees.” Amendments to Title 8, Section 3427 now permit a qualified tree worker to enter a tree suspended by the closed safety type hook of a crane when a tree cannot be safely accessed by conventional methods permitted in existing standards.</p> <p>In addition, Oregon OSHA has issued a letter of interpretation condoning the practice of hoisting a climber, and Washington State OSHA regulations spell out under what circumstances a “boatswain’s chair” may be used to hoist a worker with a crane. To further understand this issue, we point to OSHA’s industry-specific standards for marine terminals contained in 29 CFR 1917.45(j)(1)(ii) that permit the employee to be hoisted by a crane or derrick in a “boatswain’s chair” or other device rigged to prevent it from accidental disengagement from the hook or supporting member.</p> <p>For clarification, a boatswain’s chair is a seat supported by slings attached to a suspended rope, designed to accommodate one employee in a sitting position. It is an archaic term for something that was the precursor to the modern-day work-positioning arborist saddle we use in a tree or on a crane load line.</p> <p>The overarching reason that the tree worker is hoisted by the crane or uses the crane as a tie-in point is because it presents the <i>safest alternative</i> for that removal operation. Moreover, in all of the thousands and thousands of hazardous tree removal jobs in which arborists have used cranes, <i>not one climber in our industry has been killed by using the ANSI-compliant and safe work practice of being hoisted by the crane.</i></p> <p>Juxtaposed against this statistic are at least 11 tree workers who died in</p> |  |
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| <p><b><u>Commenter 3, Continued:</u></b></p> | <p>calendar years 2006 and 2007 when the tree they were in failed. Indeed, there are several fatalities among the 27 “tree trimming” accidents cited by VOSH in which a tree failed while the climber was in it. Exercising hindsight, a crane would have offered a far more safe and secure tie-point to any one of them.</p> <p>In the interest of worker safety and in consideration of the fact that it is writing a standard applicable solely to arborist operations and not the full scope of all crane operations, VOSH needs to make a clean break from old crane standards and their one-size-fits-all requirements. The phrase, “...if the crane manufacturer's specifications and limitations do not prohibit such use” must be removed from 16VAC25-73-60(G)(9).”</p> <p><b>“16VAC25-73-60(D)(10).</b> It is infeasible to comply with the statement: “The winch shall never be used with personnel, including the operator, within the span of the winch cable and the winch.”</p> <p>The statement could be interpreted to mean that workers cannot be situated anywhere between the winch and where the winch line is attached to a limb, even if they are to the side of the winch line. We believe that the original intent of the Z133 language was to address the hazard of a worker in very close proximity being clipped by a winch line that is suddenly tensioned. If this is the case, there has to be a better way to phrase it.</p> <p>We suggest the following revision:</p> <p>“10. All personnel shall be sufficiently clear of the winch and winch cable (line) before the winch is activated and while the winch cable is under tension so as to avoid being struck.””</p> | <p><b>Agency Response:</b></p> <p>The Department respectfully disagrees with the Commenter’s contention that compliance with the provision would be infeasible, and that the provision may have only been designed to address the hazard of a worker being clipped by a winch line that is suddenly tensioned. The Department does not recommend adoption of the language proposed by the Commenter.</p> <p>First, the Department notes that the language in question is original to ANSI Z133.1-2006, with no changes having been made by the Department. It has been the Department’s stated intent, at the request of the tree trimming industry, and the TCIA in particular, to use as much of ANSI Z133.1-2006 as possible because of the familiarity of the industry with the national consensus standard, to limit costs of compliance as much as possible, to aid in ease of developing standardized training programs, to ease the burdens of compliance as much as possible for multi-state employers, and finally because it represents the input of many varied interest groups, including employer representatives, employee representatives, government agencies, public utility companies, safety professionals and others. TCIA was a participant in the development of ANSI Z133.1-2006.</p> <p>Second, while Department personnel were not part of the ANSI Committee and cannot speak directly to</p> |
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| <p><b><u>Commenter 3, Continued:</u></b></p> | <p><b>“16VAC25-73-90(A)(9). The following statements must be re-phrased to clarify their intent:</b> “All components of a climbing system (e.g., ropes, pulleys, etc.) shall meet the manufacturer’s design, specifications, and limitations. Components from different climbing systems shall not be combined without prior approval of the manufacturers.”</p> <p>Perhaps it is because these statements are not derived from ANSI Z133.1-2006 language that we cannot decipher their intent. As goals they would be unattainable, and as VOSH requirements, they would be both unattainable to the employer and unenforceable by VOSH.</p> <p>No manufacturer that we are aware of creates a complete climbing system, although some manufacturer may produce more than one of the main components. Competition and product liability being what they are, Company X is not likely to grant “prior approval” for the use of Company Y’s rope, if Company X manufactures both a rope and a saddle. Even if a manufacturer wanted to give prior approval, it could</p> | <p>the intent of the original language, there are a number of potential hazards associated with winches other than the winch line being suddenly tensioned. They include the winch line breaking under tension which would expose employees to whipping winch lines; a catastrophic failure of the winch or the winch anchoring point, which would not only expose employees to a winch line out of control, but could expose them to flying parts from the winch itself; or a failure of the tree while the winch line was under tension which would expose employees to both falling tree sections and the out-of-control winch line. The Department believes the hazards of using a winch line under tension are sufficiently dangerous to warrant such a strong prohibition as is described in the original ANSI language. Employees need to be required to be well-clear of the winch line path while it is under tension, with only the tree climber and the winch operator in any proximity to the winch line while it is under tension, with those two employees not being in the path but on either end of the winch line connection points.</p> <p><b>Agency Response:</b></p> <p>The original language was developed in response to discussions held during the Department’s meeting with interested parties of June 10, 2008, which was attended by TCIA representatives. Nonetheless, the Department agrees with the Commenter’s recommendation to amend 16VAC25-73-90.A.9., as follows:</p> <p>16VAC25-73-90.A.9.</p> <p><b><u>“9. All components of a climbing system (e.g., ropes, pulleys, etc.) shall meet the manufacturer’s design, specifications, and limitations. Components from different climbing systems shall not be combined without prior approval of the manufacturers. The qualified arborist shall assure that each component of the climbing system is approved by the manufacturer for its intended use as well as its compatibility with other components of the climbing system.”</u></b></p> <p>The Department agrees with the Commenter’s recommendation to add a definition of “climbing system”, as follows:</p> <p>16 VAC 25-73.20</p> <p><b><u>“Climbing system” means the various pieces of gear or components that the arborist relies upon to secure himself/herself while aloft in the tree,</u></b></p> |
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| <p><b>Commenter 4:<br/>May 14, 2009,<br/>Melissa A. Bailey,<br/>Ogletree, Deakins,<br/>Nash, Smoak &amp;<br/>Stewart; Counsel<br/>to the Utility Line<br/>Clearance<br/>Coalition (ULCC)</b></p> | <p>not possibly anticipate all the combinations of components that the arborist may wish to employ.</p> <p>To clarify what we believe is VOSH’s intent with this paragraph, we suggest the following wording:</p> <p><u>16VAC25-73-90(A)(9). The qualified arborist shall assure that each component of the climbing system is approved by the manufacturer for its intended use as well as its compatibility with other components of the climbing system.</u></p> <p>Misunderstanding and confusion stems from the fact that “climbing system” was never defined in Z133. We suggest the following definition:</p> <p><u>“Climbing system” means the various pieces of gear (components) that the arborist relies upon to secure himself/herself while aloft in the tree, such as but not limited to: an arborist saddle, one or more arborist climbing lines, and one or more lanyards as well as carabiners and/or snap hooks approved by their manufacturer for climbing.</u></p> <p>On behalf of our members and the hundreds of workers this proposal potentially affects, we thank you for the opportunity to comment. We sincerely appreciate the dedication and diligence of the VOSH personnel who brought the proposal to this point, and we look forward to working with VOSH for the expedient adoption of an effective arborist standard to keep our workforce safe.</p> <p>“The ULCC is composed of: Asplundh Tree Expert Co., Carolina Tree Care, The Davey Tree Expert Co., Lewis Tree Service, Inc., Lucas Tree Experts, Inc., McCoy Tree Surgery, Inc., Nelson Tree Service, Inc., Townsend Tree Service Inc., Trees, Inc., and Wright Tree Service, Inc. Each of these companies engages in vegetation management for electric utility, municipal and commercial customers. This work</p> | <p><u>such as but not limited to: an arborist saddle, one or more arborist climbing lines, and one or more lanyards as well as carabiners and/or snap hooks approved by their manufacturer for climbing.</u></p> <p><b>Agency Response:</b></p> <p>The Department agrees that some additional language in the Applicability section of the proposed regulation would help to clear up any confusion on the issue of line-clearance tree trimming.</p> <p>First, we would note that it has been the Department’s stated intent, at the request of the tree trimming industry, to use as much of ANSI Z133.1-</p> |
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|  | <p>includes electric utility “right of way” clearance to create or maintain electric power line rights-of-way as specified by the electric utility or other customer. ULCC members use specialized techniques that allow utility line-clearance to be done safely and consistently without the de-energization of electric supply to communities.</p> <p>The ten members of the ULCC perform an estimated ninety percent of all utility line-clearance tree-trimming work performed in the nation. ULCC member companies employ approximately 37,000 employees who are involved in line-clearance arborist work, and employee approximately 1500 qualified line-clearance arborists and trainees in Virginia.</p> <p><b>SUBSTANTIVE COMMENTS</b></p> <p>As stated, line-clearance tree trimming is already regulated by an industry-specific standard – 29 C.F.R. Section 1910.269. As such, the ULCC concludes that an additional regulation covering the operations of its members is unnecessary. If, however, VOSHA determines that an additional regulation would present some safety benefit in relation to costs of implementation, then the ULCC has a number of suggested changes.</p> <p><b>A. Section 1910.269 Regulates the Hazards of Line-Clearance Tree Trimming Work, and a Separate Regulation Applicable to Line-Clearance Tree Trimming is Unnecessary</b></p> <p>Based on the ULCC’s analysis, the provisions in Section 1910.269 cover many – if not most – of the hazards addressed in VOSHA’s proposal. Specifically, the following hazards or issues are currently addressed in Section 1910.269:</p> <ul style="list-style-type: none"> <li>• First aid (in fact, the first aid and CPR provisions in Section 1910.269 are more stringent than those proposed by VOSHA)</li> </ul> | <p>2006 as possible because of the familiarity of the industry with the national consensus standard, to limit costs of compliance as much as possible, to aid in ease of developing standardized training programs, to ease the burdens of compliance as much as possible for multi-state employers, and because it represents the input of many varied interest groups, including employer representatives, employee representatives, government agencies, public utility companies, safety professionals and others. In fact, five of ULCC’s members were participants in the development of ANSI Z133.1-2006 (Asplundh Tree Expert Co., The Davey Tree Expert Co., Lewis Tree Service, Inc., McCoy Tree Surgery, Inc., and Wright Tree Service, Inc.). The Department made no initial attempt to change the scope or application of the proposed regulation with regard to line-clearance tree trimming with the understanding that the industry did not have any significant concerns with ANSI Z133.1-2006, but is willing to do so now to address more recent concerns that have apparently developed since its adoption in 2006.</p> <p>In developing a proposed language change to address line-clearance tree trimming issues, the Department took into consideration that work around overhead powerlines can be done by several different groups:</p> <p>Group 1: tree trimmers working for the owner or operator of the lines,</p> <p>Group 2: tree trimmers who contract with the owner of operator of the lines, and</p> <p>Group 3: tree trimmers who have no connection with the owner or operator of the lines.</p> <p>The Department also had to consider the implications of the Virginia Overhead High Voltage Line Safety Act, Va. Code §59.1-406, et.seq., which contains requirements and prohibitions against working around overhead high voltage lines (voltage in excess of 600 volts as defined in the Act), but does not apply to work “performed by the employees of the owner or operator of the systems or independent contractors engaged on behalf of the owner or operator of the system to perform the work.”</p> <p>The Department recommends the following changes to the regulatory language in the Application section. The effect of the changes will be to:</p> |
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|  | <ul style="list-style-type: none"> <li>• Brush chippers</li> <li>• Communication, <i>i.e.</i> the requirement for a second line-clearance tree trimmer to have voice-communication with the first trimmer for certain work (in fact, Section 1910.269(r)(1)(ii) is more protective than the provisions proposed by VOSHA in Section 25-73-50(B)(4))</li> <li>• Minimum approach distances for workers and equipment</li> <li>• Insulated tools</li> <li>• Prohibitions on work during adverse weather conditions</li> <li>• Sprayers, including walking and working surfaces requirements applicable when employees stand on top of equipment</li> <li>• Stump cutters</li> <li>• Power and chain saws</li> <li>• Climbing ropes</li> <li>• Fall protection requirements, which allow fall protection used for aerial lifts to consist of either full-body harness with six foot lanyards or body belts with shorter lanyards</li> <li>• Provisions that mandate substantial training in “the safety-related work practices, safety procedures and other safety requirements” that “pertain to their respective job requirements,” as well as “applicable emergency procedures”</li> <li>• “Regular supervision” and “inspections” to determine whether employees are complying with safety-related work practices</li> <li>• Refresher or re-training because of: deficiencies found during the inspections; the introduction of new technology or equipment; or the performance of tasks that are performed less than once per year</li> <li>• An assessment of the potential electrical hazards presented by the work as well as a job briefing are required before each job</li> <li>• Requirements for mechanical equipment, including inspections, operating requirements, and the use of outriggers</li> </ul> <p>VOSHA proposes regulating these same hazards. VOSHA’s reasoning in proposing a second regulation to cover the same hazards already addressed in</p> | <p>exempt line-clearance tree trimming, as defined in the proposed regulation, from coverage under the proposed regulation</p> <p>provide that work around overhead power lines that does not meet the definition of line-clearance tree trimming in the proposed regulation, must either be conducted in accordance with the Virginia Overhead High Voltage Line Safety Act (voltage in excess of 600 volts as defined in the Act), or for lesser voltages conducted in accordance with 16VAC25-90-1910.333(c)(1)</p> <p>The recommended changes are as follows:</p> <p>16 VAC 25-73-10.C.</p> <p>“C. This regulation is intended to apply to all employers engaged in the business, trade, or performance of arboriculture, including employers engaged in tree pruning, repairing, maintaining; removing trees; cutting brush; or performing pest or soil management who hire one or more persons to perform such work. This regulation may require situational modifications in response to personnel emergencies and is not intended to limit the options available to emergency responders. <b><u>This regulation does not apply to line-clearance tree trimming activities as defined in 16VAC25-73-20. Such activities are covered by 16VAC 25-90-1910.269.</u></b> This regulation does not apply to logging operations covered by 16VAC25-90-1910.266. This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a qualified arborist. Such activities are covered by 16VAC25-90-1910.266.”</p> <p>The Department recommends the following change to the definition of “line-clearance tree trimming,” which, with the exception of the last sentence (which is derived from Va. Code §59.1-413), is identical to the corresponding definition in 16VAC25-90-1910.269(x):</p> <p>16 VAC 25-73-20</p> <p>“ <del>“Line—clearance”</del> <b><u>“Line-clearance tree trimming”</u></b> means the pruning, trimming, repairing, maintaining, removing, <del>treating,</del> or clearing of trees or the cutting of brush (vegetation management) that is within 10 feet (3.05 m) of electric supply lines and equipment; <del>and vegetation management work performed by qualified line-clearance arborists</del></p> |
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|  | <p>Section 1910.269 is unclear. This is particularly true given the confusion that a second regulation would cause. For example, how would compliance officers decide whether to cite Section 1910.269 or the Tree Trimming Operations regulation? Would employers be required to cull through both regulations and determine which provisions to include in compliance programs and training materials? What if Section 1910.269 and the VOSHA regulation have different requirements for the same hazard – how would employers identify the provisions that apply?</p> <p>Uncertainty about compliance obligations will result in citations that do not target true safety hazards, and may even result in additional hazards if front-line supervisors are unable to determine which regulation applies to the work being performed. As such, VOSHA should exempt line-clearance tree trimming from the Tree Trimming Operations regulation.</p> <p>Finally, the ULCC concludes that VOSHA has underestimated the costs associated with implementing a second vertical standard for the line-clearance industry. ULCC member companies estimated that developing programs to comply with Section 1910.269 resulted in costs of between \$1 million to \$10 million. The cost of training an employee to the level of a qualified line-clearance arborist was approximately \$12,000. While there is clearly overlap between the VOSHA proposal and Section 1910.269, the costs of developing and implementing an entirely new program and providing training will be substantial. These costs are not justified by any safety benefits in the line-clearance industry.</p> | <p><del>or qualified line-clearance arborist trainees for the construction or maintenance of electric supply lines and/or the electric utility right-of-way corridor.</del> Line-clearance <u>tree trimming</u> activities are performed by the employees of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.</p> <p>The above changes will clarify that Groups 1 and 2 will be covered by 16VAC25-90-1910.269 generally and -1910.269(r) specifically when engaged in “line-clearance tree trimming” activities, while Group 3 will be covered by the proposed regulation.</p> <p>Please also see the Department’s response to <b>Commenter 1</b> that clarifies that the following activities, even when undertaken by employees of the owner or operator of the power lines or a subcontractor on behalf of the owner/operator are not covered by 16VAC25-90-1910.269(r), but will be covered by the Logging Standard, 16VAC25-90-266, unless the tree removal activities are directly supervised by a qualified arborist or qualified line-clearance arborist, in which case the proposed regulation would apply:</p> <p>Right-of-way clearance for <b>new</b> power generation, transmission and distribution lines, where no exposure to electrical lines is present.</p> <p>Land clearing activities associated with the construction of new power generation, transmission and distribution facilities, where no exposure to electrical lines in present.</p> <p>Tree trimming operations around buildings, offices, facilities owned or operated by the cooperatives or other utility companies, where no exposure to electrical lines is present.</p> <p>The following changes will be made to 16VAC25-73-50, Electrical hazards:16VAC25-73-50. Electrical hazards.</p> <p>“A. General.</p> <p>1. All overhead and underground electrical conductors and all communication wires and cables shall be considered energized with potentially fatal voltages. <u><b>This section does not apply to line-clearance tree trimming as defined in 16VAC25-73-20, which shall be conducted in accordance with 16VAC25-90-1910.269. Non-line-clearance</b></u></p> |
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|  | <p><b><u>tree trimming work around overhead high voltage lines covered by §§ 59.1-406 through 59.1-414 of the Code of Virginia, Overhead High Voltage Line Safety Act (Act)(voltage in excess of 600 volts as defined in the Act), shall be conducted in accordance with the Act. Non-line-clearance tree trimming work around overhead electrical lines of 600 volts or less not covered by the Act shall be conducted in accordance with 16VAC25-90-1910.333(c)(1).</u></b></p> <p>2. The employer shall certify in writing that each employee has been trained to recognize and is appropriately qualified to work within proximity to electrical hazards that are applicable to the employee's assignment.</p> <p>3. Arborists and other workers shall be instructed that:</p> <p>a. Electrical shock will occur when a person, by either direct contact or indirect contact with an energized electrical conductor, energized tree limb, tool, equipment, or other object, provides a path for the flow of electricity to a grounded object or to the ground itself. Simultaneous contact with two energized conductors phase to phase will also cause electric shock that may result in serious or fatal injury.</p> <p>b. Electrical shock may occur as a result of ground fault when a person stands near a grounded object (for example, if an uninsulated aerial device comes into contact with a conductor with outriggers down).</p> <p>c. In the event of a downed energized electrical conductor or energized grounded object, there exists the hazard of step potential.</p> <p>4. If the minimum approach distance for a qualified line-clearance arborist (shown in Table 1 of this section) or for a qualified arborist (shown in Table 2 of this section) cannot be maintained during arboricultural operations, the electrical system owner/operator shall be advised and an electrical hazard abatement plan implemented before any work is performed in proximity to energized electrical conductors.</p> <p>B. Working in proximity to electrical hazards.</p> <p>1. The items contained in subsection A of this section shall always be included in the review of this section. Sections 59.1-406 through 59.1-414 of the Code of Virginia, Overhead High Voltage Line Safety Act (Act), are hereby incorporated by reference, and apply as specified in the Act anytime the voltage of overhead high voltage lines, <del>as defined in the Act,</del> exceeds 600 volts <b>as defined in</b></p> |
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|  | <p><b>the Act.</b> The Act does not apply anytime line-clearance activities are performed by the employees of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.</p> <p>2. An inspection shall be made by a qualified arborist to determine whether an electrical hazard exists before climbing, otherwise entering, or performing work in or on a tree.</p> <p>3. Only qualified line-clearance arborists or qualified line-clearance arborist trainees shall be assigned to work where an electrical hazard exists. Qualified line-clearance arborist trainees shall be under the direct supervision of qualified line-clearance arborists. A qualified line-clearance arborist trainee shall not serve as a ground observer for another qualified line-clearance arborist trainee who is engaged in line clearing operations aloft, unless a qualified arborist is also present at the work site.</p> <p><del>4. A second qualified line-clearance arborist or line-clearance arborist trainee shall be within visual or normal (that is unassisted) voice communication during line-clearing operations aloft when an arborist must approach closer than 10 feet (3.05 m) to any energized electrical conductor in excess of 750 volts (primary conductor) or when:</del></p> <p><del>a. Branches or limbs closer than 10 feet (3.05 m) to any energized electrical conductor in excess of 750 volts (primary conductor) are being removed, which cannot first be cut (with a nonconductive pole pruner/pole saw) to sufficiently clear electrical conductors, so as to avoid contact; or</del></p> <p><del>b. Roping is required to remove branches or limbs from such electrical conductors.</del></p> <p><u>Original Table 1 is deleted. Original Table 2 is redesignated as Table 1.</u></p> <p><del>5. Qualified line-clearance arborists and line-clearance arborist trainees shall maintain minimum approach distances from energized electrical conductors in accordance with Table 1.</del></p> <p><del>6. 4 All other</del> arborists and other workers shall maintain a minimum approach distance from energized electrical conductors in accordance with Table <del>2-1</del><u>1</u>.</p> <p><del>7. Branches hanging on an energized electrical</del></p> |
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|  |  | <p><del>conductor shall be removed using nonconductive equipment.</del></p> <p><del>8. 5.</del> The tie-in position shall be above the work area and located in such a way that a slip would swing the arborist away from any energized electrical conductor or other identified hazard.</p> <p><del>9. 6.</del> While climbing, the arborist shall climb on the side of the tree that is away from energized electrical conductors while maintaining the required distances shown in Table 1 <del>or 2, as applicable.</del></p> <p><del>10. 7.</del> Footwear, including lineman's overshoes or those with electrical-resistant soles, shall not be considered as providing any measure of safety from electrical hazards.</p> <p><del>11. 8.</del> Rubber gloves, with or without leather or other protective covering, shall not be considered as providing any measure of safety from electrical hazards.</p> <p><del>12. 9.</del> A rope that is wet, that is contaminated to the extent that its insulating capacity is impaired, or that is otherwise not to be considered insulated for the voltage involved shall not be used near exposed energy lines.</p> <p><del>13. 10.</del> Ladders, platforms, and aerial devices, including insulated aerial devices, shall be subject to minimum approach distances in accordance with Table 1 <del>or 2, as applicable.</del></p> <p><del>14. 11.</del> Aerial devices with attached equipment (such as chippers) brought into contact with energized electrical conductors shall be considered energized. Contact by people and/or equipment shall be avoided.</p> <p><del>15. 12.</del> Emergency response to an electric contact shall be performed in accordance with 16VAC25-73-40 C.</p> <p><del>C. Storm work and emergency conditions: line clearance.</del></p> <p><del>1. The items contained in subsection A of this section shall always be included in the review of this section.</del><del>2. Line clearance shall not be performed during adverse weather conditions such as thunderstorms, high winds, and snow and ice storms.</del></p> <p><del>3. Qualified line clearance arborists and qualified line clearance arborist trainees performing line clearance after a storm or under similar conditions shall be trained in the special hazards associated with this type of work.</del></p> <p><del>4. Line clearance operations shall be suspended</del></p> |
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| <p><b><u>Commenter 4, Contin</u></b></p> | <p><b>“If Line-Clearance Work Will Be Regulated, the Requirements for Line-Clearance Tree Trimming Should Be Included in Section 1910.269 and Supplemented by the VOSHA Regulation</b></p> <p>As stated, it is important to provide a link between the requirements in Section 1910.269(r) and the Tree Trimming Operations, and to clarify that Section 1910.269(r) will continue to serve as the primary vertical standard for line-clearance work. In addition, the definitions of “line-clearance tree trimming” in Section 1910.269 and the VOSHA regulation must be consistent. The amendments to Section 1910.269 and VOSHA’s proposal that are necessary to effectuate these changes are discussed in this section.</p> <p><u>1. Section 1910.269(r) and the VOSHA proposal must be amended to clarify the requirements for line-clearance tree trimming.</u></p> <p>Amendments to both Section 1910.269(r) and the VOSHA proposed regulation are required to ensure that qualified line-clearance arborists understand which provisions are applicable. Section 1910.269(r) must be amended to read: “This paragraph and 16VAC25-73 provide additional requirements for line clearance (as that term is defined in 16VAC25-73-20) operations.”</p> <p>Section 16VAC25-73-10 must be expanded to state in a new Section (D): “This regulation and Paragraphs (a)(2), (b), (c), (g), (k), (p) and (r) of 1910.269 apply to line clearance operations performed by qualified line clearance arborists and qualified line clearance arborist trainees (as those terms are defined by 16VAC25-73-20). To the</p> | <p><del>when adverse weather conditions or emergency conditions develop involving energized electrical conductors. Electrical system owners/operators shall be notified immediately.”</del></p> <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> |
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|  | <p>extent the applicable provisions in Section 1910.269 and 16VAC25-73 govern or address the same hazards, operations, equipment or work practices, the provisions in Section 1910.269 shall apply to line-clearance operations.”</p> <p>These amendments are critical for the line-clearance industry for two reasons. First, the suggested amendments provide an important link between Section 1910.269 – which has served successfully as the vertical standard applicable to line-clearance tree trimming – and the VOSHA regulation. This regulatory system will allow line-clearance arborist employers to continue to communicate effectively with its customers – electrical utilities – regarding safety requirements since both entities are regulated by Section 1910.269. Line-clearance arborists and electric utilities worked together extensively during federal OSHA’s promulgation of Section 1910.269, and conclude that it is an effective standard that comprehensively addresses the electrical and other hazards employees face. To put it simply, Section 1910.269 provides a common safety “language” that is used by both electric utilities and line-clearance arborists, and it makes both industries safer. As such, the provisions in Section 1910.269 must be preserved.</p> <p>Second, the provisions in the proposed VOSHA regulation are important, and should act as a supplement to the provisions in Section 1910.269. Specifically, to the extent Section 1910.269 does not address a particular hazard, then the VOSHA regulation should apply. The alternative – applying both Section 1910.269 and the VOSHA regulation – is simply not practical, and may even increase the risk of safety hazards. For example, Section 1910.269(a)(2) sets out training requirements that have been used successfully in the line-clearance industry since 1994. These provisions rather than the training provisions in the VOSHA regulation should apply.</p> |  |
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| <p><b><u>Commenter 4,<br/>Continued</u></b></p> | <p>Similarly, line-clearance arborists perform job briefings as required by Section 1910.269(c), and those provisions rather than the requirements in the VOSHA regulation should apply. Confusion will result if line-clearance arborists are not certain which provision apply.</p> <p>Finally, citations issued because employers did not follow the specific provisions in the VOSHA regulation when Section 1910.269 applies to the relevant hazard do not benefit anyone. For example, there is no evidence that line-clearance arborists who receive training pursuant to Section 1910.269(a)(2) would be any less safe than those trained pursuant to the provisions in the VOSHA regulation. If citations alleging violations under the VOSHA regulation are issued in this or other situations, employers are forced to deal with a “gotcha” citation issued in the absence of a specific safety hazard, employees are not made any safer, and both the employer and VOSHA have wasted resources.”</p> <p><u>“1. The definitions of “line-clearance tree trimming” in Section 1910.269 and the proposed Tree Trimming Operations regulation are incompatible</u></p> <p>Section 1910.269 defines “line-clearance tree trimming” as: “The pruning, trimming, repairing, maintaining, removing, or clearing of trees or the cutting of brush that is within 10 feet (305 cm) of electric supply lines and equipment.” The definition in VOSHA’s proposal is broader, and includes the following types of work: “vegetation management work performed by qualified line-clearance arborists or qualified line-clearance arborist trainees for the construction or maintenance of electric supply lines and/or the electric utility right-of-way corridor.” VOSHA’s proposal adopts the ANSI definition of “line clearance.”</p> <p><i>Put simply, applying these two separate</i></p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which revised the definition of “line-clearance tree trimming” in the proposed regulation to correspond to 16VAC25-90-1910.269(x), with the exception of the last sentence, which is derived from Va. Code §59.1-413, of the Virginia Overhead High Voltage Line Safety Act.</p> |
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| <p><b><u>Commenter 4, Continued</u></b></p> | <p><i>definitions will not work.</i> Specifically, the Section 1910.269 definition applies when work is performed within 10 feet of power lines, and VOSHA’s proposed definition applies to all line-clearance work, regardless of the distance from power lines. If both definitions are maintained, it will be difficult (if not impossible) for line-clearance employers to determine which standard applies. For example, if the work is performed within 10 feet of power lines, does that mean that the Tree Trimming Operations regulation would not apply and Section 1910.269 would? In the alternative, would the VOSHA regulation and Section 1910.269 both apply? If so, how would the employer determine which provisions to follow with regard to specific hazards?”</p> <p><b>“B. Recommended Changes to the Provisions in the VOSHA Proposal</b></p> <p>The specific substantive changes that should be made to the proposal are discussed below.</p> <p><u>1. Provisions regarding application of the logging standard</u></p> <p>Section 25-73-10 states that the Tree Trimming Operations standard does not apply to “tree removal activities where the primary objective is land clearing preparation for construction, real estate development, or other related activities, <i>unless directly supervised by a qualified arborist.</i>” (emphasis added). In other words, VOSHA proposes that work supervised by a qualified arborist, including the removal of multiple trees, is not “logging” covered by Section 25-90-1910.266. Rather, this work would be subject to the provisions in the proposed VOSHA regulation.</p> <p>The ULCC commends VOSHA for including this provision. Logging and work performed by qualified line-clearance arborists are fundamentally different. Loggers fell a tree using methods designed to preserve as much</p> | <p><b>Agency Response:</b></p> <p>See response to <b>Commenter 3</b> above, where this change was made.</p> |
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| <p><b><u>Commenter 4,<br/>Continued</u></b></p> | <p>marketable wood as possible. In contrast, line-clearance arborists remove vegetation in accordance with the customer’s specifications using the most efficient and safe methods possible, which typically means cutting a tree in pieces or felling a tree completely and then disposing of the branches and other materials by chipping, moving them to the side of the road to be picked up, or hauling them to another location for disposal. Also, unlike logging work performed in a forest, the removal of vegetation for line-clearance purposes requires work methods that prevent contact with electric supply lines and other obstructions, such as utility poles and guy wires.</p> <p>Because of the different work methods involved in logging and tree care, application of the logging standard to work performed by qualified line-clearance arborists is inappropriate. VOSHA has clearly recognized this in its proposal. The ULCC does, however, have several suggested changes. First, proposed Section 25-73-10(C) should be amended to clarify that the work supervised by either a “qualified arborist” or a “qualified line-clearance arborist” is not “logging” and would be covered by the proposed regulation. The exclusion of the term “line-clearance arborist” appears to be an oversight.”</p> <p>“Second, the note to Section 25-73-90(E)(13) is similar to proposed Section 25-73-10(C), but states that the work must be “directly supervised by a <i>certified</i> arborist.” (emphasis added). The term “certified arborist” is not defined, and the ULCC is unclear about what VOSHA means by using this term. To the extent that VOSHA is considering requiring arborists to be certified by the International Society of Arboriculture (ISA), the ULCC urges VOSHA to reject that position. Given the statement in the preamble to the regulation, VOSHA has apparently decided that requiring ISA certification</p> | <p><b>Agency Response:</b></p> <p>The Department agrees with the Commenter and recommends the following language change:</p> <p>16VAC25-73-90.E.13.</p> <p>13. All workers other than the individual engaged in manual land-clearing operations shall be at least two tree lengths away from the tree or trunk being removed. This requirement does not apply in the presence of site restrictions, such as waterways or cliffs. Other arborists and workers shall be beyond the trees' striking range and at a distance as close to</p> |
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| <p><b><u>Commenter 4,</u></b><br/><b><u>Continued</u></b></p> <p><b><u>Commenter 4,</u></b><br/><b><u>Continued</u></b></p> | <p>would be expensive and provide little safety benefit. As such, the use of the term “certified” appears to be a mistake. VOSHA should correct Section 25-73-90(E)(13) to state that work “directly supervised by a qualified arborist or qualified line-clearance arborist” is covered by the regulation and is therefore not “logging.”</p> <p>“Third, the term “directly supervised” is not defined. On some line-clearance projects, multiple crews consisting of some qualified line-clearance arborists and some trainees may be supervised by a single foreman. The foreman and other qualified line-clearance arborists are involved in assessing the hazards of the job and planning the work pursuant to the job briefing process, but may not be directly involved in the work tasks, and may even leave the job site at certain times during the work. Given these factors, VOSHA must clarify that the qualified line-clearance arborist is not required to be directly involved in each job task. Rather, a qualified line-clearance arborist must be involved in assessing the hazards, planning the work, and identifying any special measures that must be taken to mitigate hazards. VOSHA should change the language in Sections 25-73-10(C) and 25-73-90(E)(13) to read, in relevant part: “This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless a qualified arborist or qualified line-clearance arborist assesses the work, identifies potential hazards, and identifies any protective measures or work methods that must be followed during the work.”</p> <p>“2. <u>Fall protection</u></p> <p>In Section 25-73-60(b)(2), VOSHA proposes mandating full-body harnesses with energy-absorbing lanyards for employees working aloft in aerial lifts. In addition, the</p> | <p>twice the tree's height as possible.</p> <p>NOTE: This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a <del>certified</del> <b>qualified</b> arborist. Such activities are covered by 16VAC25-90-1910.266.</p> <p><b>Agency Response:</b></p> <p>The Department respectfully disagrees with the Commenter’s suggested change and does not recommend any change to the proposed regulation. The intent of the language referenced is to assure, that since the more stringent requirements contained in the Logging Standard would not have to be complied with, the immediate presence of and direct supervision by a qualified arborist or qualified line-clearance arborist will provide an added level of protection to prevent accidents and avoid employee exposure to tree felling hazards.</p> <p><b>Agency Response:</b> See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> |
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|  | <p>introduction to the regulation states that “the option to allow an employee to use a body belt and lanyard in an aerial lift has been removed.” At the same time, VOSHA incorporates by reference Section 1910.67, which is the federal standard governing aerial lifts. Section 1910.67 requires a body belt and lanyard when working from an aerial lift and, in Section 1910.269(g)(2)(v), OSHA specifically references Section 1910.67 as governing the fall protection requirements for aerial lifts. Section 1910.67 does not limit the length of the lanyard. Given the incorporation of Section 1910.67, it is not clear whether VOSHA is attempting to mandate the use of a full-body harness, or whether the choice to use a body belt and lanyard as set out in Section 1910.67 will be preserved.</p> <p>Assuming VOSHA’s regulation will effectively remove the option to use a body belt and lanyard and leave line-clearance arborists with only one option – a full-body harness and lanyard – the ULCC urges VOSHA to reconsider. While full-body harnesses have some safety advantages, they also have significant disadvantages that are unique to line-clearance work. Specifically, workers performing line-clearance may be working above power lines or other hazards. Mandating a full-body harness with a six-foot lanyard increases the risk that employees will fall directly on to live electrical lines or sharp tree parts, which poses a substantial risk of electrocution or impalement. While a body belt with a lanyard may theoretically produce unacceptable force on the waist of the operator, this is surely preferable to the risk of electrocution. An additional hazard is posed if an employee exits an aerial lift with his or her fall protection still attached because the lanyard may get caught in a chipper, which would almost certainly result in death. Line-clearance employers can (and do) impose many work rules related to safety, but the consequences of inadvertently violating this work rule</p> |  |
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| <p><b><u>Commenter 4,</u></b><br/><b><u>Continued</u></b></p> | <p>are simply too steep.”</p> <p>“3. <u>Components of climbing systems</u></p> <p>Proposed Section 25-73-90(A)(9) addresses climbing systems, and states: “Components from different climbing systems shall not be combined without prior approval from the manufacturers.” This provision is unworkable for two reasons. First, manufacturers will not agree to allow their systems to be combined with components from other manufacturers for the obvious reason – they want employers to buy complete systems from them. Moreover, manufacturers are, understandably, concerned about products liability lawsuits, and will likely decline to even consider whether their products are compatible with those of another manufacturer, let alone verify or certify this to the line-clearance employer. The likelihood that a manufacturer will respond to a request from an employer to verify that its products can be safely used with another manufacturer’s products is essentially nil, and this fact has nothing to do with employee safety.</p> <p>Second, VOSHA’s proposal will result in significant expense to employers. Because manufacturers will not agree to confirm that their products can be safely used with others, line-clearance employers in Virginia will be forced to purchase components from a single manufacturer and discard other products that are perfectly serviceable and safe. Again, there is absolutely no safety reason to require employers to take this action, and VOSHA apparently has not considered the costs this would impose.</p> <p>The ULCC has no objection to a provision requiring employers to follow the manufacturer’s instructions. For example, a manufacturer may state that a component (such as a rope) should not be used with a particular <i>type</i> of another component (such as a pulley). However, this warning from the manufacturer has nothing to do with</p> | <p><b>Agency Response:</b></p> <p>See the Department’s response to <b>Commenter 3</b>, which addressed this issue with language changes similar but not identical to that suggested by the Commenter.</p> |
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| <p><b><u>Commenter 4, Continued</u></b></p> | <p>which company made the component.</p> <p>Given these issues, the ULCC strongly urges VOSHA to amend this provision. The ULCC suggests that VOSHA amend the language in Section 25-73-90(A)(9) to read as follows: “The employer shall comply with manufacturer’s specifications and limitations applicable to components of climbing systems. Components from different manufacturers shall not be combined unless the employer or a qualified line-clearance arborist determines that it is safe to combine the components.”</p> <p>“4. <u>Training provisions for qualified line-clearance arborists and VOSHA personnel</u></p> <p>ULCC member companies provide substantial training to employees, and agree with VOSHA that operations and safety training is crucial to protecting workers. As stated, the training provisions in Section 1910.269(a)(2) must continue to apply to qualified line-clearance arborists. At the same time, the ULCC appreciates the inclusion of Appendix A, which sets out guidelines for training materials and may be useful as ULCC member companies continue to improve the training required by Section 1910.269(a)(2).</p> <p>The introduction to the proposed regulation states that VOSHA “personnel will have to be trained in the requirements” of the new regulation, and that VOSHA will “develop a standardized training program for employers that can be placed on the department’s website.” The ULCC would like to assist in developing these materials, and would be pleased to offer a webinar or other training session regarding line-clearance operations or an opportunity for VOSHA compliance personnel to observe a job site. The assistance of line-clearance employers in developing these materials is particularly important</p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> |
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| <p><b><u>Commenter 4,<br/>Continued</u></b></p> | <p>given the interplay between Section 1910.269 and the VOSHA regulation. The ULCC can provide valuable input about the importance of ensuring that Section 1910.269 continues to be the primary vertical standard regulating line-clearance work. More importantly, ULCC members can provide VOSHA compliance staff with information about how and why certain provisions certain provisions should apply to line-clearance work.”</p> <p>“5. <u>First aid</u></p> <p>The ULCC is confused about the proposals for first-aid and CPR training. Proposed Section 25-73-40(C)(5) references 16 VA 25-95. This provision is apparently under consideration, but has not been adopted, since the introduction to the proposed regulation references the “board’s current rulemaking, which proposed a change in the general industry requirements for first aid/CPR.” The ULCC has no information about the proposed changes to the first aid provisions, and is therefore unable to comment on whether it makes sense to apply them to line-clearance work.</p> <p>The ULCC suggests that VOSHA apply the provisions for first aid and CPR that are in Section 1910.269(b), at least for line-clearance work. In its analysis, the Department of Planning states that requiring one employee “trained in first aid and CPR present at all (working) times” will “cost less for all arboriculture employers who have more than one employee.” While this may be true, the requirements in Section 1910.269(b), which generally mandate that at least two employees are trained, is more protective.</p> <p>Specifically, under VOSHA’s proposal, if the one employee with training is injured or has a heart attack, there will be no other employee to assist him or her. As such, the Section 1910.269(b) provisions are more protective and should be applied to line-clearance</p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> |
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| <p><b><u>Commenter 4,<br/>Continued</u></b></p> | <p>work.”</p> <p>“6. <u>Vehicles and mobile equipment</u><br/>The ULCC has two comments on these proposed provisions. First, proposed Section 25-73-60(A)(9) states: “Fall protection shall be provided for employees performing maintenance or inspecting the top of units six feet or more above a lower level.” The ULCC recommends that VOSHA delete this provision because providing fall protection is not feasible. Specifically, where will employees tie off? In the alternative, how will the employer fashion guardrails that fit on a vehicle or other mobile equipment?</p> <p>Also, even assuming there were some way to design portable guardrails (and the ULCC does not believe there is), VOSHA has apparently not considered the costs involved, which would likely be substantial. In addition, VOSHA has apparently not accounted for the low level of risk involved in these types of maintenance and inspections. Employees do not spend substantial amounts of time atop vehicles performing maintenance and inspections. As such, the costs of providing fall protection – again, assuming it is even possible – would far outweigh any benefits.</p> <p>Federal OSHA has recognized that it is <i>not</i> feasible to require fall protection on vehicles. OSHA has proposed amendments to the Subpart D standards several times, most recently in a proposal issued on May 2, 2003. 68 <i>Fed. Reg.</i> 23527. OSHA proposed exempting from the Subpart D requirements all “surfaces that are an integral part of self-propelled, motorized mobile equipment, other than platforms hoisted or lifted by powered industrial lift trucks, which are covered by paragraph (e) of Section 1910.31.” The ULCC recommends that VOSHA follow federal OSHA’s lead on this issue.</p> <p>Second, Section 25-73-60(A)(7)</p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> <p>Also, see response to <b>Commenter 3</b> which addresses the issue of fall protection during maintenance and inspection activities.</p> <p>With regard to 16VAC25-73-60.A.7, Va. Code §40.1-22(5) provides in part that:</p> <p>“Such standards [as adopted by the Virginia Safety and Health Codes Board] when applicable to products which are distributed in interstate commerce shall be the same as federal standards unless deviations are required by compelling local conditions and do not unduly burden interstate commerce.”</p> <p>The requirement in 16VAC25-73-60.A.7 is a provision that could be interpreted to place a burden on manufacturers of covered mobile equipment to install skid resistant materials, and could therefore be covered by Va. Code §40.1-22(5). To avoid possible legal ramifications of this code section, the Department recommends the following language change:</p> <p>16VAC25-73-60.A.7.</p> <p><b>“7. <u>If previously installed by the manufacturer, skid resistant</u>—S step surfaces and platforms on mobile equipment shall be <u>properly maintained skid resistant</u>.”</b></p> |
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| <p><b><u>Committer 4,<br/>Continued</u></b></p> | <p>proposes that “platforms on mobile equipment” be “skid resistant.” This provision is taken directly out of the ANSI standard. ULCC member companies, many of which are on the ANSI Committee, have never interpreted this provision to require skid resistance for aerial lifts. The ULCC requests that VOSHA confirm that interpretation.”</p> <p>“7. <u>Traffic control</u></p> <p>VOSHA states in the introduction that it is proposing adoption of the Virginia Department of Transportation Manual on Uniform Traffic Control rather than the federal Department of Transportation Manual on Uniform Traffic Control (“MUTCD”) because the MUTCD has a “great deal of ‘should’ and ‘may’ provisions,” which are “unenforceable.”</p> <p>While that may be true, the ULCC advises VOSHA to consider the safety and financial effects of deviating from the MUTCD. Line-clearance arborists often work in multiple states, particularly during storm work, and are trained as necessary to address traffic control through compliance with the MUTCD. Requiring these employees to learn what may be a different signage and signaling system for use only in Virginia poses real safety hazards because of the risk of confusion. In addition, employers are vulnerable to citations for following the MUTCD rather than VDOT’s procedures even when there is no real safety hazard. Compliance with the VDOT system also has financial implications that VOSHA has apparently not considered because employers may be required to purchase different signs and equipment for use only in Virginia, and will have to train employees who may work in Virginia in different traffic control requirements. The additional purchases and training provide no discernable safety benefit.</p> <p>If VOSHA is concerned about the</p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> <p>In addition and as a point of clarification, the VDOT Work Area Protection Manual is substantially based on relevant sections of the MUTCD, so the Department does not anticipate significant areas of disagreement between the documents, other than the fact that the MUTCD uses such unenforceable language as “may” and “should” and designates most of the safety provisions as advisory or recommended instead of mandatory.</p> <p>The Department does not recommend any change to the proposed regulatory language.</p> |
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| <p><b><u>Commenter 4,</u></b><br/><b><u>Continued</u></b></p> | <p>“may” and “should” language, then it should review the language in the MUTCD, change the permissive language so that it mandates certain actions where appropriate, and adopt it as a regulation.”</p> <p>“8. <u>Minimum approach distances</u></p> <p>The ULCC has two comments on these provisions. First, the notes to Tables 1 and 2 in Section 25-73-50(B) state that the minimum approach distances (“MADs”) for “voltages between 301 and 1000 volts exceed those specified by 29 C.F.R. 1910.269,” but VOSHA does not explain why this is the case.</p> <p>The ULCC understands that federal OSHA has re-opened the record in the Section 1910.269 rulemaking to address some technical errors in the MADs. If it is VOSHA intention to issue a regulation consistent with the corrected MADs, then the ULCC supports that effort.</p> <p>If, however, VOSHA intends to establish MADs different than those under Section 1910.269, VOSHA should reconsider this course of action. As stated, the crews that work for ULCC member companies may work in multiple states, particularly during emergency storm situations. Requiring line-clearance arborists to follow one set of MADs unless they are working in Virginia is not advisable from either a practical or safety standpoint. In addition, VOSHA has set out no justification for mandating MADs that are different than federal OSHA’s.</p> <p>Second, if it is not possible to perform the work outside of the MADs, then the utility will be required to implement an electric hazard abatement plan as set out in proposed Section 25-73-50(A)(4). The ULCC has adopted a guidance document setting out a sample procedure for qualified line-clearance arborists to use in communicating with the electric utility on this issue. The ULCC urges VOSHA to recognize the</p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> |
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| <p><b><u>Commenter 4, Continued</u></b></p> | <p>sample procedure, either through adoption as a voluntary Appendix to the regulation or in its compliance guidance.<sup>4</sup> “</p> <p>“9. <u>Equipment</u></p> <p>VOSHA proposes throughout the regulation that employers must “tag” and “remove from service” any equipment that is “damaged.” See e.g. Section 25-73-60(B), (C) and (D). It is not clear why damaged equipment must be both tagged and removed from service. Employers could certainly tag equipment warning employees not to use it, or could remove the equipment from the site or disable it so that it cannot be used.</p> <p>The ULCC suggests amending the language to read as follows: “Damaged [insert type of equipment] must be tagged or removed from service such that employees cannot use the [equipment].””</p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> <p>The Department has encountered numerous instances during VOSH inspections where employers have removed from service such items as damaged ladders or damaged extension cords, which were then put back in to use by an employee that did not realize the damaged item was not to be used, because they had not been informed of the employer’s action. Tagging items removed from service provides that notice to any employee on any workshift that the item is damaged and not to be used.</p> <p>The Department does not recommend any change to the proposed regulatory language.</p>  |
| <p><b><u>Commenter 4, Continued</u></b></p> | <p>“10. <u>Fire protection</u></p> <p>The provisions in Section 25-73-40(E) address fire protection, but do not mention the burning of vegetation in open areas. ULCC member companies may perform open burning, provided that it is permitted in the local jurisdiction. VOSHA should clarify that open burning is permitted.”</p>   | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> <p>In addition, the language questioned by the Commenter is original to ANSI Z133.1-2006. As previously mentioned, it has been the Department’s stated intent, at the request of the tree trimming industry, to use as much of ANSI Z133.1-2006 as possible because of the familiarity of the industry with the national consensus standard, to limit costs of compliance as much as possible, to aid in ease of developing standardized training programs, to ease the burdens of compliance as much as possible for multi-state employers, and because it represents the input of many varied interest groups, including employer representatives, employee representatives, government agencies, public utility companies, safety professionals and others. Five of ULCC’s members were participants in the development of</p> |

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| <p><b><u>Commenter 4, Continued</u></b></p> | <p>“11. <u>Underground utilities</u></p> <p>Proposed Section 25-73-60(B)(22) states that employers “shall locate” underground hazards prior to using aerial devices off-road. Proposed Section 25-73-60(E)(6) states that the operator “shall be aware” of underground utilities prior to performing work with a stump cutter.</p> <p>While the ULCC understands the intent of this provision, it is simply not practical. First, there is no evidence that the use of aerial devices or stump cutters in off-road locations typically poses a hazard from underground utilities. Second, requiring line-clearance arborist employers to contact providers of underground utilities each and every time an aerial device or stump cutter is used off-road would be time-consuming and costly, and would most often provide little or no safety benefit. It is evident from the proposal that VOSHA has not tried to quantify these costs or assessed whether there would be a safety benefit. Given the lost work time that would result if these provisions are adopted, the costs would be substantial.”</p> | <p>ANSI Z133.1-2006 (Asplundh Tree Expert Co., The Davey Tree Expert Co., Lewis Tree Service, Inc., McCoy Tree Surgery, Inc., and Wright Tree Service, Inc.).</p> <p>The Department does not recommend any change to the proposed regulatory language.</p> <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> <p>In addition, the language questioned by the Commenter is original to ANSI Z133.1-2006 - see Agency Response to item 10 above.</p> <p>With regard to stump cutters, their use could constitute an excavation under Va. Code § 56-265.14, et. seq., the Underground Utility Damage Prevention Act, which provides in §56-265.17, that:</p> <p>“...no person, including operators, shall make or begin any excavation or demolition without first notifying the notification center for that area. Notice to the notification center shall be deemed to be notice to each operator who is a member of the notification center. The notification center shall provide the excavator with the identity of utilities that will be notified of the proposed excavation or demolition. Except for counties, cities, and towns, an excavator who willfully fails to notify the notification center of proposed excavation or demolition shall be liable to the operator whose facilities are damaged by that excavator, for three times the cost to repair the damaged property, provided the operator is a member of the notification center. The total amount of punitive damages awarded under this section, as distinguished from actual damages, shall not exceed \$10,000 in any single cause of action.”</p> |
| <p><b><u>Commenter 4, Continued</u></b></p> | <p>12. <u>Portable power tools</u></p> <p>“Section 25-73-70(B)(5)(b) states that arborists shall not “lay extension cords in water.” The ULCC recommends mandating portable GFCI rather than relying upon arborists to avoid water. Requiring an engineered solution – like GFCI – will be more protecting than</p>  | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> <p>In addition, the language questioned by the Commenter is original to ANSI Z133.1-2006 - see</p>   |

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|   | <p>relying upon administrative solution, such as adherence to an operating procedure.</p> <p>Also, proposed Section 25-73-70(B)(5)(c) requires “support” for tools and supply cords used aloft. While support may be advisable based upon the configuration of the work or other circumstances, mandating support any time tools or supply cords are used aloft is not justified. The ULCC suggests that this provision be amended to read: “If the qualified arborist identifies a safety hazard, then electric power tools and supply cords must be supported by a tool lanyard or separate line when used aloft.””</p>   | <p>Agency Response to item 10 above.</p>  |
| <p><b><u>Commenter 4, Continued</u></b></p> | <p>“13. <u>Visual/voice communication</u></p> <p>Section 25-73-90(A)(2) requires “visual or voice communication” for “operations above 12 feet.” Section 25-73-50 also requires communication for operations performed within 10 feet of electric supply lines. The ULCC questions why twelve feet and ten feet have been deemed the proper “cut-off” for visual or voice communication.</p>  | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p> <p>In addition, the language questioned by the Commenter is original to ANSI Z133.1-2006 - see Agency Response to item 10 above.</p> |
| <p><b><u>Commenter 4, Continued</u></b></p> | <p>“14. <u>Rigging equipment</u></p> <p>Section 25-73-90(D)(5) states that rigging and climbing equipment “shall be clearly marked to indicate their different purposes.” This proposed requirement [is] too prescriptive, and does not take into account the fact that specific types of rigging and climbing equipment may look very different without special markings. The ULCC suggests that VOSHA adopt the language in the ANSI standard: “When the potential exists for rigging equipment to be confused with climbing equipment, the equipment shall be clearly marked to indicate their different purposes.””</p> | <p><b>Agency Response:</b></p> <p>See response to this Commenter above which exempts “line-clearance tree trimming” activities, as defined in 16VAC25-73-20, from the proposed regulation.</p>  |
| <p><b><u>Commenter 4,</u></b></p>           | <p><b>“D. Incorporating Changes to the ANSI Standard in the VOSHA</b></p>   | <p><b>Agency Response:</b></p>  |



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|  | <p>2. Amend language concerning pesticide application requirements to clarify that the regulation is only intended to apply to tree care operations and not intended to be more widely applicable to landscaping operations.</p> <p>3. Amend language that defines job briefings to clarify that the briefings are meant to provide information before work begins and about what tasks, equipment, etc., will be required to complete a job.</p> | <p>arboricultural operations and who has demonstrated ability in the performance of the special techniques involved.”</p> <p><b>Agency Response:</b></p> <p>The Department agrees with DPB’s recommendation. The following proposed changes to the regulatory language limit application of the regulation to tree care operations as referenced in the definition of “arboriculture” in 16 VAC 25-73-20 (<u>“Arboriculture” means the art, science, technology, and business of utility, commercial, and municipal tree care.</u>):</p> <p>16 VAC 25-73-10.</p> <p>“C. This regulation is intended to apply to all employers engaged in the business, trade, or performance of arboriculture, including employers engaged in tree pruning, repairing, maintaining; removing trees; cutting brush; or performing pest or soil management <b>during tree care operations</b> who hire one or more persons to perform such work. This regulation may require situational modifications in response to personnel emergencies and is not intended to limit the options available to emergency responders. <b><u>This regulation does not apply to non-arboricultural landscaping operations.</u></b> This regulation does not apply to logging operations covered by 16VAC25-90-1910.266. This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a qualified arborist. Such activities are covered by 16VAC25-90-1910.266.”</p> <p><b>Agency Response:</b></p> <p>The Department agrees with DPB’s recommendation and proposes the following change to the regulatory language:</p> <p>16 VAC 25-73-20.</p> <p><u>“Job briefing” means the communication before work begins</u> of at least the following subjects for arboricultural operations: hazards associated with the job, work procedures involved, special precautions, electrical hazards, job assignments, and</p> |
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|  |  | personal protective equipment.” |
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**All changes made in this regulatory action**

*Please detail all changes that are being proposed and the consequences of the proposed changes. Detail new provisions and/or all changes to existing sections.*

| Current section number | Proposed new section number, if applicable | Current requirement | Proposed change and rationale  |
|------------------------|--|---------------------|--|
| None                   | 16VAC25-73                                 | None                | See “Changes made since the proposed stage” section. See text of final regulation below showing changes made since proposed stage. |

**CHAPTER 73  
REGULATION APPLICABLE TO TREE TRIMMING OPERATIONS**

**16VAC25-73-10. Scope, purpose and applicability.**

- A. This regulation contains arboriculture safety requirements for pruning, repairing, maintaining, and removing trees; cutting brush; and for using equipment in such operations. (Note: Terms specific to the safe practice of arboriculture are defined in 16VAC25-73-20.)
- B. The purpose of this regulation is to provide safety criteria for arborists and other workers engaged in arboricultural operations.
- C. This regulation is intended to apply to all employers engaged in the business, trade, or performance of arboriculture, including employers engaged in tree pruning, repairing, maintaining; removing trees; cutting brush; or performing pest or soil management **[during tree care operations]** who hire one or more persons to perform such work. This regulation may require situational modifications in response to personnel emergencies and is not intended to limit the options available to emergency responders. **[This regulation does not apply to non-arboricultural landscaping operations. This regulation does not apply to line-clearance tree trimming activities as defined in 16VAC25-73-20. Such activities are covered by 16VAC 25-90-1910.269.]** This regulation does not apply to logging operations covered by 16VAC25-90-1910.266. This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, **[right-of-ways for new utility installations]** or other related activities, unless directly supervised by a qualified arborist **[or qualified line-clearance arborist]**. Such activities are covered by 16VAC25-90-1910.266.

**16VAC25-73-20. Definitions.**

The following words and terms when used in this chapter shall have the following meanings unless the context indicates otherwise:

"Aerial device" means any one of the following types of vehicle-mounted apparatus used to elevate personnel to jobsites above ground:

1. Extensible boom platform.
2. Aerial ladder.
3. Articulating boom platform.
4. Vertical tower.
5. A combination of any of the above, as defined in ANSI A92.2.

"Anti-two block device" means a device consisting of a hollow weight suspended from the boom nose or jib of log loaders, cranes, or related hoists by a chain. The weight hangs with hoist cable running through its center. An electromechanical switch mounted on the boom nose or jib is connected to the chain via a retractable steel cable. When contact is made with the suspended weight by the hook block or any other lifting device nearing the nose or jib, the anti-two block switch circuit is deactivated, and hoist up or telescope out is prevented.

"Apex" means the point at which two saw cuts meet to form a notch.

"Applicator" means a qualified person engaged in the application of materials such as, but not limited to, pesticides, growth regulators, and fertilizers.

"Approved" means acceptable to the federal, state, or local jurisdiction having enforcement authority.

"Arboriculture" means the art, science, technology, and business of utility, commercial, and municipal tree care.

"Arborist" means an individual engaged in the profession of arboriculture.

"Arborist climbing line" means a line designated to support the climber while aloft in a tree or attached to a crane, constructed according to specifications outlined in 16VAC25-73-90 A 8.

"Arborist saddle" means an arrangement of straps, fittings, and buckles or other elements in the form of a waist belt with a low attachment element or elements and connecting support encircling the legs, suitably arranged to support the body in a sitting position.

"Ascender" means a mechanical device used for climbing rope.

"Authorized" means designated by the entity that has care, custody, and control of the unit.

"Back cut" means the cut made in a tree limb or trunk on the side opposite the intended direction of fall.

"Belay" means roping technique, managed by the ground person, to safeguard the arborist while climbing.

"Brush hog" means a heavy-duty rotary mower, normally pulled by a farm-type tractor, used for cutting and mulching brush.

"Bucket" means a basket-type platform approximately four feet (1.22 m) high, which is attached to the end of the upper boom on an aerial device, providing a work platform for working aloft.

"Bucking" means the act of sawing trees, limbs, or both, into smaller sections once they are on the ground.

"Cant hook" means a long-handled lever fixed with a blunt metal end to handle logs; includes a swinging, metal hook opposing the blunt end to create leverage.

"Carabiner" means a connector generally composed of a trapezoidal or oval-shaped

body with a closed gate or similar arrangement that may be opened to receive an object and, when released, automatically closes to retain the object.

"Chopping tool" means a wooden, fiberglass, or steel-handled tool with a sharp, single- or double-edged steel head or blade mounted to it that is used to cut or split wood (for example, an ax or machete).

"Climbing/friction hitch" means a hitch used for securing a tree climber to the climbing line, permitting controlled ascent, descent, and work positioning. Examples of climbing hitches include, but are not limited to, the tautline hitch, Blake's hitch, and the Prusik hitch/knot.

**["Climbing system" means the various pieces of gear or components that the arborist relies upon to secure himself/herself while aloft in the tree, such as but not limited to: an arborist saddle, one or more arborist climbing lines, and one or more lanyards as well as carabiners and/or snap hooks approved by their manufacturer for climbing.]**

"Conventional notch" means a directional felling cut into the side of a tree, facing the intended direction of fall and consisting of a horizontal face cut and an angle cut above it, creating a notch of approximately 45 degrees.

"Crew leader" means the qualified arborist designated as the individual in charge of a specific job or group of workers.

"Crotch" (n.) means branch union; the angle formed by two branches in the tree. "Crotch" (v.) means to place a line through a branch union.

"Damaged" means a defect, impairment or injury to machinery, vehicle, tool, material or equipment that would meet the manufacturer's criteria for removal from service, or in the absence of such criteria, would materially effect the safe operation or safe use of the item during tree trimming operations.

"DBH" means acronym for diameter at breast height; diameter of a tree measured at 4.5 feet (1.3 m) above ground.

"Deadman control" means a safety switch, electrical or mechanical, that deactivates the equipment's function when released by the operator.

"Dielectric" means nonconductive of electrical current.

"Direct contact" means a direct contact is made when any part of the body touches or contacts an energized electrical conductor.

"Direct supervision" means direct supervision occurs when a qualified arborist or a qualified arborist supervisor is physically present on the jobsite.

"Drop-starting" means the act of starting a chain saw by pushing the saw away from the body with one hand while simultaneously pulling on the starter cord handle with the other.

"Electrical conductor" means any overhead or underground electrical device capable of carrying an electric current, including communications wires and cables, power lines, and other such fixtures or apparatus.

"Electrical hazard" means an object or situation that poses risk of injury or death due to direct or indirect contact with an electrical conductor. Where unguarded, energized electrical conductors are present, specific minimum approach distances based on the arborist's or worker's level of training, as set forth in this regulation, shall be followed.



"Electrical system owner/operator" means an organization that operates or controls the transmission and/or distribution of electric power through electrical conductors.

"Electric supply" means conductors used to transmit electric energy and their necessary supporting or containing structures. Signal lines of more than 400 volts are always supply lines, and those of less than 400 volts are considered as supply lines if so run and operated throughout.

"Energy (shock) absorber" means a component of a climbing system whose primary function is to dissipate energy and limit deceleration forces that the system imposes on the body during fall arrest.

"Fall-arrest lanyard" means a rope or strap designed to be used with a full-body harness to limit maximum arresting force on a climber to 1,800 pounds (8 kN) in a fall.

"False crotch" means a device installed in a tree to set ropes during climbing or rigging because there is not a suitable natural crotch available, or to protect an available crotch, and/or to reduce wear on ropes.

"False crotch for rigging" means a pulley, block, sling, lashing, or metal ring affixed to a tree's leader or limb, through which a load line is passed, to lower or raise limbs or equipment.

"False crotch redirect" means consists of the use of a false crotch in conjunction with either a natural crotch or a second false crotch in instances where the arborist is working away from the trunk of the tree and could otherwise be subject to an uncontrolled pendulum swing in the event of a slip.

"Footlock" means to climb up a suspended rope by pulling with the hands and arms and pushing upward with the feet. The loose end of the rope is wrapped under the middle and over the top of one foot and is locked in place with pressure from the other foot.

"Friction point" means the point at which the rope surface of the climber's hitch rubs against the climbing line.

"Good working condition" means a term describing a piece of equipment that has no mechanical defects, has all guards in place, and is operated as intended by the manufacturer.

"Ground fault" means any undesirable current path from a current-carrying conductor to ground.

"Guarded" means covered, fenced, enclosed, or otherwise protected by suitable covers or casings, barrier rails or screens, mats, or platforms that have been designed by the electrical system owner/operator to minimize the possibility of dangerous approach or accidental contact by persons or objects under normal conditions. Also see unguarded.

"Handline" means a length of rope designated as a tool to leverage, lift, and hold tools, equipment, wood, or other objects; the proper rope strength is specified for each particular use.

"High-pressure excavation" means the removal or displacement of soil using pressurized air or water.

"Humboldt notch" means a directional felling cut into the side of a tree, facing the intended direction of fall and consisting of a horizontal face cut and an angled cut below it, creating a notch of approximately 45 degrees. A Humboldt cut is usually reserved for larger trees on steep slopes.

"Indirect contact" means indirect contact is made when any part of the body touches any conductive object, including tools, tree branches, trucks, equipment, or other objects, that is in contact with an energized electrical conductor. Such contact can also be made as the result of communication wires and cables, fences, or guy wires being accidentally energized.

"Job briefing" means the communication **[before work begins]** of at least the following subjects for arboricultural operations: hazards associated with the job, work procedures involved, special precautions, electrical hazards, job assignments, and personal protective equipment.

"Kilovolt, kV (Table **[s 1 and 2]** )" means the term for 1,000 volts, abbreviated as kV. Higher voltages are generally given as kilovolts. Example: 12.5 kV (12,500 volts) and 19.9 kV (19,900 volts).

"Kilonewton, kN" means the measurement of force, abbreviated as kN. Equal to 224.8 pounds. Example: 24.02 kilonewtons equals 5,400 pounds.

"Ladder" means a two-, three-, or four-legged structure that utilizes vertical side legs with cross sections uniformly placed between the side legs to be used as steps; available in wood, aluminum, or fiberglass; used to ascend to and descend from a height. Also see tripod/orchard ladder.

"Lanyard" means a component of a climbing system consisting of a flexible line of rope, wire rope, or a strap that generally has a connector at each end for connecting the body support to a fall arrester, energy absorber, anchorage connector, or anchorage.

"Leg protection" means personal protective equipment constructed with cut-resistant material, such as ballistic nylon, intended to reduce the risk of injury to the legs during chain-saw operations.

**~~["Line-clearance" "Line-clearance tree trimming"]~~** means the pruning, trimming, repairing, maintaining, removing, **[treating]**, or clearing of trees or the cutting of brush (vegetation management) that is within 10 feet (3.05 m) of electric supply lines and equipment; **~~[and-vegetation-management work performed by qualified line-clearance arborists or qualified line-clearance arborist trainees for the construction or maintenance of electric supply lines and/or the electric utility right-of-way corridor]~~**. Line-clearance **[tree trimming]** activities are performed by the employees of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.

"Load binder" means a synthetic strap with a ratchet mechanism or a properly secured rope or chain to encircle a tree trunk or limb as a means of preventing splitting.

"Manual land clearing" means the removal of trees, shrubs, and vines using chain saws or other cutting tools where there are no structures or objects that need to be avoided and pull lines are not used to pull or drop a tree and/or trunk to the ground.

"Maul" means a heavy-handled hammer, sometimes made with a single edge; used to drive wedges or split wood.

"Minimum approach distance" means safe working distances from overhead electrical conductors as defined in Table **[s 1 and 2]** of 16VAC25-73-50.

"Open-face notch" means a directional felling cut into the side of the tree, facing the intended direction of fall and consisting of two cuts creating a notch greater than 70 degrees.

"Outrigger" means built-in device used to stabilize cranes, aerial devices, and similar equipment.

"Phase" means any current-carrying conductor that has an electric potential other than ground (ground is assumed to be 0 volts).

"Phase to ground (Table **[s 1 and 2]** )" means the electric potential (voltage) between a conductor and ground.

"Phase to phase" means the electrical potential (voltage) between two conductors, each having its own electric potential relative to ground.

"Primary conductor" means any conductor, including aluminum, copper, or aluminum conductor steel reinforced (ACSR), that is bare, covered, or insulated, with a nominal voltage above 750 volts.

"Proximity" means an area within 10 feet (3.05 m) of energized overhead electrical conductors rated 50 kV phase to phase or less. For overhead electrical conductors rated more than 50 kV phase to phase, the distance is increased 4/10 inch (10 mm) for each additional kV.

"Prusik knot" means a sliding friction knot, as in a work-positioning lanyard.

"Prusik loop" means an endless loop of rope used to fashion a Prusik knot. The endless loop may be spliced or knotted with, at minimum, a double fisherman's knot.

"Qualified arborist" means an individual who, ~~[by possession of a recognized degree, certification, or professional standing, or]~~ through related training and on-the-job experience, is familiar with the equipment and hazards involved in arboricultural operations and who has demonstrated ability in the performance of the special techniques involved.

"Qualified arborist trainee" means an individual undergoing on-the-job training under the direct supervision of a qualified arborist. In the course of such training, the trainee becomes familiar with the hazards and equipment involved in arboricultural operations and demonstrates ability in the performance of the special techniques involved.

"Qualified crane operator" means an individual who, by reason of a recognized credential or professional standing, or through related training and on-the-job experience, is familiar with the equipment and hazards involved with arboriculture crane operations and who has demonstrated competence in operating a crane and performing the special techniques involved.

"Qualified line-clearance arborist" means an individual who, through related training and on-the-job experience, is familiar with the equipment and hazards in line-clearance and has demonstrated the ability to perform the special techniques involved. This individual may or may not currently be employed by a line-clearance contractor.

"Qualified line-clearance arborist trainee" means an individual undergoing line-clearance training under the direct supervision of a qualified line-clearance arborist. In the course of such training, the trainee becomes familiar with the equipment and hazards in line-clearance and demonstrates ability in the performance of the special techniques involved.

"Qualified personnel" means an individual who, by reason of training and experience, has demonstrated the ability to safely perform assigned duties and, where required, is properly licensed in accordance with federal, state, or local laws and regulations.

"Quick-acting connector" means hose connectors in a hydraulic or pneumatic system designed to allow rapid connection or disconnection without leakage when the system is pressurized.

"Saddle, arborist": see arborist saddle.

"Secured (object)" means made firm or tight; fastened. Example: The load is secured to the truck.

"Secured (person)" means when an arborist is safeguarded from unintended movement by utilizing a climbing system that is attached to the arborist and connected to a tree or other stable support. Examples of being secured include, but are not limited to, (i) being tied in, (ii) using a work-positioning lanyard, (iii) being on belay, and (iv) ascending the arborist climbing line using the footlock technique while utilizing a Prusik loop or ascenders.

"Shall," as used in this regulation, denotes a mandatory requirement.

"Should," as used in this regulation, denotes an advisory recommendation.

"Snap hook" means commonly called a self-locking or double-locking rope snap. The locking type (required by this regulation for climbing) has a self-closing, self-locking gate that remains closed and locked until intentionally opened by the user for connection or disconnection. A captive eye is an integral part of a snap hook but is independent of the hook and gate portion.

"Split tail system and split tail" refers to a system in which the climbing line is tied to the saddle, preferably indirectly with an ANSI-compliant carabiner or locking rope snap, without leaving a tail beyond the termination. The climbing/friction hitch is then tied onto the climbing line with a separate short section of climbing line called a split tail. The split tail is separately connected to a designated anchor point on the saddle.

"Spotter" means a person within voice and visual communication of the driver and located in a position to view the area in which the vehicle (unit) is backing to help ensure that the backing operation is, and will remain, safe.

"Step potential" means the voltage between the feet of a person standing near an energized grounded object. It is equal to the difference in voltage, given by the voltage distribution curve, between two points at different distances from the electrode. A person could be at risk of injury during a fault simply by standing near the grounding point.

"Tackle blocks and pulleys" means equipment used in most tree situations to take a strain rather than move a load. Critical components of the system are the appropriate ropes, blocks, and, especially, the lock or connecting link.

"Termination knot" means any knot suitable for rope termination, including, but not limited to, double fisherman's loop (scaffold hitch), anchor hitch, and buntline hitch.

"Tied in" means the term that describes an arborist whose climbing line has been run through a natural or false crotch attached to an arborist's saddle and completed with a climbing hitch or mechanical device, permitting controlled movement and work positioning.

"Tool lanyard" means short line or strap used to secure a tool while working aloft.

"Tripod/orchard ladder" means a three-legged ladder that utilizes the third leg to form a tripod to stabilize itself among orchard trees and/or shrubs. It is recommended for use on turf for better stability and to avoid slippage of the legs. Not recommended for use on hard surfaces.

"Unguarded" means not guarded from approach or contact with electrical conductors.

"Volt" means a unit of electric potential difference between two points. Lower-voltage systems are generally expressed in terms of volts, for example, 120 volts or 240 volts.

"Wedge" means a piece of material with two sides meeting at an angle; used to raise or split objects by applying a driving force, such as with a hammer.

"Wheel chock" means wedge-shaped block manufactured or employer approved to prevent unintentional movement of vehicle. Wheel chocks are placed in front of or in back of a vehicle's tires or tracks. If necessary, the chocks can be placed both in front and in back of the tires or tracks.

"Worker" means an individual involved in an arboricultural operation, such as ground operations, equipment operations, and removal operations.

"Working load" means limiting load values derived from the minimum breaking strength of a cord or rope divided by the design factor. For example, given a minimum breaking strength of 10,000 pounds (44.48 kN) and a design factor of 10:  $10,000/10 = 1,000$  (working load, in pounds) or given a minimum breaking strength of 10,000 pounds (44.48 kN) and a design factor of 5:  $10,000/5 = 2,000$  (working load, in pounds).

"Working-load limit" means the working load that must not be exceeded for a particular application as established by a regulatory or standards-setting agency.

"Workline" means rope used for lifting, lowering, or guiding limbs or equipment, or both, into or out of the tree.

"Work-positioning system" means an arborist climbing system designed to be used under tension to support the arborist or other worker on an elevated vertical surface, such as a tree limb, and allow him to work with both hands free.

#### **16VAC25-73-30. Orientation and training.**

A. Prior to permitting an employee to engage in any arboricultural activity covered by this regulation, the employer shall ensure that each employee receives orientation and training on the requirements of this regulation.

B. Refresher training on applicable provisions of this regulation shall be provided by the employer for any employee who has:

1. Been observed to violate the requirements of this regulation;
2. Been involved in an accident or near miss accident; or
3. Received an evaluation that reveals the employee is not working in a safe manner in accordance with the requirements of this regulation.

#### **16VAC25-73-40. General safety requirements.**

A. General.

1. Machinery, vehicles, tools, materials and equipment shall conform to the requirements of this regulation. 16VAC25-60-120 is hereby incorporated by reference.
2. Employers shall instruct their employees in the proper use, inspection, and maintenance of tools and equipment, including ropes and lines, and shall require that appropriate working practices be followed.
3. A qualified arborist shall determine whether direct supervision is needed on a jobsite.
4. A job briefing shall be performed by the qualified arborist in charge before the start of each job. The briefing shall be communicated to all affected workers. An employee working alone need not conduct a job briefing. However, the employer shall ensure that the tasks are being performed as if a briefing were required.

B. Traffic control around the jobsite.

1. High-visibility safety apparel and headgear, when required, shall conform to the Virginia Department of Transportation's (VDOT) Virginia Work Area Protection Manual.
2. Effective means for controlling pedestrian and vehicular traffic shall be instituted on every jobsite where necessary, in accordance with the VDOT's Virginia Work Area Protection Manual and applicable state and local laws and regulations.
3. Temporary traffic-control devices used in arboricultural operations shall conform to the VDOT Virginia Work Area Protection Manual and applicable federal and state regulations.

C. Emergency procedures and readiness.

1. Emergency phone numbers shall be available when and where arboricultural operations are being carried out. Arborists and other workers shall be instructed as to the specific location of such information.
2. A first-aid kit, adequately stocked and maintained in accordance with 16VAC25-95, shall be provided by the employer, when and where arboricultural operations are being carried out. Arborists and other workers shall be instructed in its use and specific location.
3. Instruction shall be provided in the identification, preventive measures, and first-aid treatment of common poisonous plants (poison ivy, poison oak, and poison sumac), stinging and biting insects, and other pests indigenous to the area in which work is to be performed.

4. Employees who may be faced with a rescue decision shall receive training in emergency response and rescue procedures appropriate and applicable to the work to be performed, as well as training to recognize the hazards inherent in rescue efforts (see 16VAC25-73-140, Appendix E).

5. Cardiopulmonary resuscitation (CPR) and first-aid training shall be provided in accordance with 16VAC25-95. **[An employer is exempted from complying with 16VAC25-95.E.1 if it can document in writing that it initiated first-aid/CPR training for all new crew personnel within two months (60 days) of hire, or whenever a previously employed person has accumulated forty-five (45) work days for the same employer during the previous year.]**

#### D. Personal protective equipment (PPE).

1. Personal protective equipment (PPE), as outlined in this section, shall be required when there is a reasonable probability of injury or illness that can be prevented by such protection, and when required by 16VAC25-90-1910.132. Training shall be provided in the use, care, maintenance, fit, and life of personal protective equipment.

2. Workers engaged in arboricultural operations shall wear head protection (helmets) that conforms to ANSI Z89.1, and in accordance with 16VAC25-90-1910.135. Class E helmets shall be worn when working in proximity to electrical conductors, in accordance with ANSI Z89.1. Workers shall not place reliance on the dielectric capabilities of such helmets.

3. Face protection shall comply with 16VAC25-90-1910.133.

4. Clothing and footwear appropriate to the known job hazards shall be approved by the employer and worn by the employee in accordance with 16VAC25-90-1910.132.

5. Respiratory protection shall comply with 16VAC25-90-134.

6. Hearing protection provided by the employer shall be worn when it is not practical to decrease or isolate noise levels that exceed acceptable standards and in accordance with 16VAC25-90-1910.95.

7. Eye protection shall comply with 16VAC25-90-1910.133 and shall be worn when engaged in arboricultural operations.

8. Chain-saw resistant leg protection shall be worn while operating a chain saw during ground operations.

#### E. Fire protection.

1. Equipment shall be refueled only after the engine has stopped. Spilled fuel shall be removed from equipment before restarting.

2. Equipment shall not be operated within 10 feet (3.05 m) of refueling operations or areas in which refueling has recently taken place.

3. Flammable liquids shall be stored, handled, and dispensed from approved containers.

4. Smoking shall be prohibited when handling or working around flammable liquids.
5. Clothing contaminated by flammable liquid shall be changed as soon as possible.
6. Open flame and other sources of ignition shall be avoided.

#### **16VAC25-73-50. Electrical hazards.**

##### A. General.

1. All overhead and underground electrical conductors and all communication wires and cables shall be considered energized with potentially fatal voltages. **[This section does not apply to line-clearance tree trimming as defined in 16VAC25-73-20, which shall be conducted in accordance with 16VAC25-90-1910.269. Non-line-clearance tree trimming work around overhead high voltage lines covered by §§ 59.1-406 through 59.1-414 of the Code of Virginia, Overhead High Voltage Line Safety Act (Act)(voltage in excess of 600 volts as defined in the Act), shall be conducted in accordance with the Act. Non-line-clearance tree trimming work around overhead electrical lines of 600 volts or less not covered by the Act shall be conducted in accordance with 16VAC25-90-1910.333(c)(1).]**

2. The employer shall certify in writing that each employee has been trained to recognize and is appropriately qualified to work within proximity to electrical hazards that are applicable to the employee's assignment.

3. Arborists and other workers shall be instructed that:

a. Electrical shock will occur when a person, by either direct contact or indirect contact with an energized electrical conductor, energized tree limb, tool, equipment, or other object, provides a path for the flow of electricity to a grounded object or to the ground itself. Simultaneous contact with two energized conductors phase to phase will also cause electric shock that may result in serious or fatal injury.

b. Electrical shock may occur as a result of ground fault when a person stands near a grounded object (for example, if an uninsulated aerial device comes into contact with a conductor with outriggers down).

c. In the event of a downed energized electrical conductor or energized grounded object, there exists the hazard of step potential.

**~~[4. If the minimum approach distance for a qualified line-clearance arborist (shown in Table 1 of this section) or for a qualified arborist (shown in Table 2 of this section) cannot be maintained during arboricultural operations, the electrical system owner/operator shall be advised and an electrical hazard abatement plan implemented before any work is performed in proximity to energized electrical conductors.]~~**

##### B. Working in proximity to electrical hazards.

1. The items contained in subsection A of this section shall always be included in the review of this section. Sections 59.1-406 through 59.1-414 of the Code of Virginia, Overhead High Voltage Line Safety Act (Act), are hereby incorporated by reference, and apply as specified in the Act anytime the voltage of overhead high voltage lines **[, as defined in the Act,]** exceeds 600 volts **[as defined in the Act]**. The Act does not apply anytime line-clearance activities are performed by the employees

of the owner or operator of the electrical or communication systems, or independent contractors engaged on behalf of the owner or operator of the system to perform the work.

2. An inspection shall be made by a qualified arborist to determine whether an electrical hazard exists before climbing, otherwise entering, or performing work in or on a tree.

3. Only qualified line-clearance arborists or qualified line-clearance arborist trainees shall be assigned to work where an electrical hazard exists. Qualified line-clearance arborist trainees shall be under the direct supervision of qualified line-clearance arborists. A qualified line-clearance arborist trainee shall not serve as a ground observer for another qualified line-clearance arborist trainee who is engaged in line clearing operations aloft, unless a qualified arborist is also present at the work site.

~~[4. A second qualified line-clearance arborist or line-clearance arborist trainee shall be within visual or normal (that is unassisted) voice communication during line-clearing operations aloft when an arborist must approach closer than 10 feet~~

~~(3.05 m) to any energized electrical conductor in excess of 750 volts~~

~~(primary conductor) or when:~~

~~a. Branches or limbs closer than 10 feet (3.05 m) to any energized electrical conductor in excess of 750 volts (primary conductor) are being removed, which cannot first be cut (with a nonconductive pole pruner/pole saw) to sufficiently clear electrical conductors, so as to avoid contact; or~~

~~b. Roping is required to remove branches or limbs from such electrical conductors.]~~

[Table 1:

~~Minimum approach distances from energized conductors for qualified line-clearance arborists and qualified line-clearance arborist trainees.~~

| Nominal voltage in kilovolts (kV) phase to phase | Includes 1910.269 elevation factor, sea level to 5,000 ft* |      | Includes 1910.269 elevation factor, 5,000–10,000 ft* |      | Includes 1910.269 elevation factor, 10,001–14,000 ft* |      |
|--|--|------|--|------|---|------|
|  | ft-in  | m    | ft-in  | m    | ft-in   | m    |
| 0.051 to 0.3                                     | Avoid contact  |      | Avoid contact  |      | Avoid contact   |      |
| 0.301 to 0.75                                    | 1-01   | 0.33 | 1-03   | 0.38 | 1-04  | 0.41 |
| 0.751 to 15.0                                    | 2-05   | 0.7  | 2-09   | 0.81 | 3-00  | 0.88 |
| 15.1 to 36.0                                     | 3-00   | 0.91 | 3-05   | 1.04 | 3-09  | 1    |
| 36.1 to 46.0                                     | 3-04   | 1.01 | 3-10   | 1.16 | 4-02  | 1.09 |
| 46.1 to 72.5                                     | 4-02   | 1.26 | 4-09   | 1.44 | 5-02  | 1.3  |
| 72.6 to 121.0                                    | 4-06   | 1.36 | 5-02   | 1.55 | 5-07  | 1.68 |
| 138.0 to   | 5-   | 1.58 | 5-   | 1.8  | 6-  | 1.96 |



|                           |                  |                 |                  |                 |                  |                  |
|---------------------------|------------------|-----------------|------------------|-----------------|------------------|------------------|
| <del>145.0</del>          | <del>02</del>    |                 | <del>11</del>    |                 | <del>05</del>    |                  |
| <del>161.0 to 169.0</del> | <del>6-00</del>  | <del>1.8</del>  | <del>6-10</del>  | <del>2.06</del> | <del>7-05</del>  | <del>2.23</del>  |
| <del>230.0 to 242.0</del> | <del>7-11</del>  | <del>2.39</del> | <del>9-00</del>  | <del>2.73</del> | <del>9-09</del>  | <del>2.95</del>  |
| <del>345.0 to 362.0</del> | <del>13-02</del> | <del>3.99</del> | <del>15-00</del> | <del>4.56</del> | <del>16-03</del> | <del>4.94</del>  |
| <del>500.0 to 550.0</del> | <del>19-00</del> | <del>5.78</del> | <del>21-09</del> | <del>6.6</del>  | <del>23-07</del> | <del>7.16</del>  |
| <del>765.0 to 800.0</del> | <del>27-04</del> | <del>8.31</del> | <del>31-03</del> | <del>9.5</del>  | <del>33-10</del> | <del>10.29</del> |

~~\*Exceeds phase to ground; elevation factor per 29 CFR 1910.269.~~

~~Note: At time of publication, the minimum approach distances in this table for voltages between 301 and 1,000 volts exceed those specified by 29 CFR 1910.269.]~~

Table ~~2.1~~

Minimum approach distances to energized conductors for persons other than qualified line-clearance arborists and qualified line-clearance arborist trainees

| Nominal voltage in kilovolts (kV) phase to phase* | Distance |       |
|---|----------|-------|
|   | ft-in    | m     |
| 0.0 to 1.0  | 10-00    | 3.05  |
| 1.1 to 15.0                                       | 10-00    | 3.05  |
| 15.1 to 36.0                                      | 10-00    | 3.05  |
| 36.1 to 50.0                                      | 10-00    | 3.05  |
| 50.1 to 72.5                                      | 10-09    | 3.28  |
| 72.6 to 121.0                                     | 12-04    | 3.76  |
| 138.0 to 145.0                                    | 13-02    | 4     |
| 161.0 to 169.0                                    | 14-00    | 4.24  |
| 230.0 to 242.0                                    | 16-05    | 4.97  |
| 345.0 to 362.0                                    | 20-05    | 6.17  |
| 500.0 to 550.0                                    | 26-08    | 8.05  |
| 785.0 to 800.0                                    | 35-00    | 10.55 |

\*Exceeds phase to ground per 29 CFR 1910.333.

~~[5. Qualified line-clearance arborists and line-clearance arborist trainees shall maintain minimum approach distances from energized electrical conductors in accordance with Table 1.]~~

[6. 4.] All other arborists and other workers shall maintain a minimum approach distance from energized electrical conductors in accordance with Table ~~[2. 1.]~~

~~[7. Branches hanging on an energized electrical conductor shall be removed using nonconductive equipment.]~~

[8. 5.] The tie-in position shall be above the work area and located in such a way that a slip would swing the arborist away from any energized electrical conductor or other identified hazard.

[9. 6.] While climbing, the arborist shall climb on the side of the tree that is away from energized electrical conductors while maintaining the required distances shown in Table 1 ~~[or 2, as applicable].~~

[10. 7.] Footwear, including lineman's overshoes or those with electrical-resistant soles, shall not be considered as providing any measure of safety from electrical hazards.

~~[11. 8.]~~ Rubber gloves, with or without leather or other protective covering, shall not be considered as providing any measure of safety from electrical hazards.

~~[12. 9.]~~ A rope that is wet, that is contaminated to the extent that its insulating capacity is impaired, or that is otherwise not to be considered insulated for the voltage involved shall not be used near exposed energy lines.

~~[13.10.]~~ Ladders, platforms, and aerial devices, including insulated aerial devices, shall be subject to minimum approach distances in accordance with Table 1 ~~[or 2, as applicable].~~

~~[14. 11.]~~ Aerial devices with attached equipment (such as chippers) brought into contact with energized electrical conductors shall be considered energized. Contact by people and/or equipment shall be avoided.

~~[15. 12.]~~ Emergency response to an electric contact shall be performed in accordance with 16VAC25-73-40 C.

~~[C. Storm work and emergency conditions: line clearance.~~

~~1. The items contained in subsection A of this section shall always be included in the review of this section.~~

~~2. Line clearance shall not be performed during adverse weather conditions such as thunderstorms, high winds, and snow and ice storms.~~

~~3. Qualified line-clearance arborists and qualified line-clearance arborist trainees performing line clearance after a storm or under similar conditions shall be trained in the special hazards associated with this type of work.~~

~~4. Line clearance operations shall be suspended when adverse weather conditions or emergency conditions develop involving energized electrical conductors. Electrical system owners/operators shall be notified immediately.]~~

#### 16VAC25-73-60. Safe use of vehicles and mobile equipment used in arboriculture.

A. General.

1. Prior to daily use of any vehicles and mobile equipment (units), visual walk-around inspections and operational checks shall be made in accordance with manufacturers' and owners' instructions (see 16VAC25-60-120) and applicable federal, state, and local requirements.
  2. Units shall be equipped and maintained with manufacturers' safety devices, instructions, warnings, and safeguards. Arborists and other workers shall follow instructions provided by manufacturers.
  3. Manufacturers' preventive maintenance inspections and parts replacement procedures shall be followed.
  4. Manufacturers' instructions shall be followed in detecting hydraulic leaks. No part of the body shall be used to locate or stop hydraulic leaks.
  5. Units shall be operated or maintained only by authorized and qualified personnel in accordance with company policies and federal, state, or local laws.
  6. Material and equipment carried on vehicles shall be properly stored and secured in compliance with the design of the unit in order to prevent the movement of material or equipment.
  7. **If previously installed by the manufacturer, skid resistant-S** step surfaces and platforms on mobile equipment shall be **~~skid-resistant properly maintained~~**.
  8. Safety seat belts, when provided by the manufacturer, shall be worn while a unit is being operated.
  9. Riding or working outside or on top of units shall not be permitted unless the units are designed for that purpose or the operator is performing maintenance or inspection. Fall protection shall be provided for employees performing maintenance **~~or inspection~~** on top of units six feet or more above a lower level. **Fall protection is not required when performing inspections on top of units six feet or more above a lower level.**
  10. Hoisting or lifting equipment on vehicles shall be used within rated capacities as stated by the manufacturers' specifications.
  11. Units with obscured rear vision, particularly those with towed equipment, shall be backed up in accordance with 16VAC25-97.
  12. When units are left unattended, keys shall be removed from ignition, the wheels chocked, and, if applicable, the parking brake applied.
  13. Units shall be turned off, keys removed from the ignition, and rotating parts at rest prior to making repairs or adjustments, except where manufacturers' procedures require otherwise. Defects or malfunctions affecting the safe operation of equipment shall be corrected before such units are placed into use.
  14. Personal protective equipment (for example, eye, head, hand, and ear protection) shall be worn in accordance with 16VAC25-73-40 D.
  15. When towing, safety chains shall be crossed under the tongue of the unit being towed and connected to the towing vehicle.
  16. The unit's exhaust system shall not present a fire hazard.
  17. Towed units that detach from another unit (for example, a motorized vehicle) shall be chocked or otherwise secured in place.
  18. Units operated off-road shall be operated in the proper gear and at the proper speed relative to the operating environment and the manufacturers' instructions and guidelines.
- B. Aerial devices.

1. The items contained in subsection A of this section shall always be included in the review of this section. 16VAC25-90-1910.67 is hereby incorporated by reference. Damaged aerial devices and vehicles shall be removed from service and tagged until repaired or discarded.
2. Aerial devices shall be provided with an approved point of attachment on which to secure a full-body harness with an energy-absorbing lanyard, which shall be worn when aloft.
3. Booms, buckets, or any other part of the aerial device shall not be allowed to make contact or violate minimum approach distances with energized electrical conductors, poles, or similar conductive objects. See Table [1 2] of 16VAC25-73-50 or §§ 59.1-406 through 59.1-414 of the Code of Virginia (Overhead High Voltage Line Safety Act), as applicable.
4. Aerial devices or aerial ladders shall not be used as cranes or hoists to lift or lower materials or tree parts, unless they were specifically designed by the manufacturer to do so (see 16VAC25-60-120).
5. Wheel chocks shall be set before using an aerial device unless the device has no wheels on the ground or is designed for use without chocks.
6. Units equipped with outriggers or a stabilizing system shall be operated in a manner consistent with manufacturers' requirements.
7. The operator shall ensure adequate clearance exists and give warning to all employees in the work area prior to lowering outriggers. Pads shall be placed under outrigger feet when they are needed to ensure stable footing.
8. When operating aerial devices, the operator shall look in the direction the bucket is traveling and be aware of the location of the booms in relation to all other objects and hazards.
9. Clearances from passing vehicles shall be maintained, or traffic control shall be provided when booms or buckets are operated over roads in accordance with VDOT's Virginia Work Area Protection Manual.
10. One-person buckets shall not have more than one person in them during operations.
11. Hydraulic/pneumatic tools shall be disconnected when they are being serviced or adjusted, except where manufacturers' procedures require otherwise.
12. To avoid flying particles or whipping hydraulic/pneumatic hoses, pressure shall be released before connections are broken, except where quick-acting connectors are used. Hydraulic/pneumatic hoses shall never be kinked in order to cut off pressure.
13. No part of the body shall be used to locate or stop hydraulic leaks.
14. Hoses affecting dielectric characteristics of equipment shall meet manufacturers' requirements.
15. The flash point of hydraulic fluid shall meet the minimum set by the manufacturer.
16. Combined loads shall not exceed rated lift capacities. Load ratings shall be conspicuously and permanently posted on aerial devices in accordance with ANSI A92.2.
17. Electric cables/cords used with electric saws or lights, or other conductive material shall not be run from the vehicle to the bucket when arborists are working in proximity to energized electrical conductors.
18. Aerial devices shall not be moved with an arborist on an elevated platform (for example, a bucket) except when equipment is specifically designed for such operation.
19. Holes shall not be drilled in buckets or liners.
20. During aerial device operations, arborists and other workers who are not qualified line-clearance arborists shall maintain a minimum approach distance from energized electrical conductors in accordance with Table [1 2] of 16VAC25-73-50. Only qualified line-clearance arborists or qualified line-clearance

arborist trainees using an insulated aerial device may operate in accordance with minimum approach distances provided in Table 1.

21. Arborists and other workers shall be instructed that insulated aerial buckets do not protect them from other electric paths to the ground, such as paths through trees, guy wires, or from one phase wire to the second phase wire, any one of which can be fatal.

22. All underground hazards shall be located prior to operating aerial lift devices off-road. These hazards could include natural gas tanks, underground oil tanks, and septic systems.

#### C. Brush chippers.

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged brush chippers shall be removed from service and tagged until repaired or discarded.

2. Access panels (for example, guards) for maintenance and adjustment, including discharge chute and cutter housing, shall be closed and secured prior to starting the engine of brush chippers. These access panels shall not be opened or unsecured until the engine and all moving parts have come to a complete stop (see 16VAC25-73-110, Appendix B, General Safety Procedures that Apply to All Tree Work).

3. Rotary drum or disc brush chippers not equipped with a mechanical infeed system shall be equipped with an infeed hopper not less than 85 inches (2.15 m) measured from the blades or knives to ground level over the center line of the hopper. Side members of the infeed hopper shall have sufficient height so as to prevent workers from contacting the blades or knives during operations.

4. Rotary drum or disc brush chippers not equipped with a mechanical infeed system shall have a flexible anti-kickback device installed in the infeed hopper to reduce the risk of injury from flying chips and debris.

5. Chippers equipped with a mechanical infeed system shall have a quick-stop and reversing device on the infeed system. The activating mechanism for the quick-stop and reversing device shall be located across the top, along each side, and close to the feed end of the infeed hopper within easy reach of the worker.

6. Vision, hearing, and other appropriate personal protective equipment shall be worn when in the immediate area of a brush chipper in accordance with 16VAC25-73-40 D.

7. Arborists, mechanics, and other workers shall not, under any circumstances, reach into the infeed hopper when the cutter disc, rotary drum, or feed rollers are moving.

8. When trailer chippers are detached from the vehicles, they shall be chocked or otherwise secured in place.

9. When in a towing position, chipper safety chains shall be crossed under the tongue of the chipper and properly affixed to the towing vehicle.

10. See 16VAC25-73-90 F, for additional requirements.

#### D. Sprayers and related equipment.

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged sprayers and related equipment shall be removed from service and tagged until repaired or discarded.

2. Walking and working surfaces of all sprayers and related equipment shall be covered with skid-resistant material.

3. Equipment on which the applicator/operator stands while the vehicle is in motion shall be equipped with guardrails around the working area. Guardrails shall be constructed in accordance with 16VAC25-90-1910.23.

4. The applicator/operator shall make a visual inspection of hoses, fittings, exposed plumbing, tanks, covers, and related equipment prior to its use each workday.
5. The applicator/operator shall not allow hoses or other parts of the equipment to create a tripping hazard for coworkers or the public.
6. The applicator/operator shall have a firm grip on the spray gun/excavation tool when pulling the trigger.
7. The operator of high-pressure excavation equipment shall wear a face shield in addition to eye protection.
8. Related equipment:
  - a. The applicator/operator shall be aware of underground utility locations when drilling holes in the ground for fertilizer or pesticide applications.
  - b. The equipment shall have splash guards, and the applicator shall wear eye protection when injecting liquid fertilizer or pesticides into the ground.
  - c. The applicator shall wear eye protection and follow label instructions when injecting liquids into trees.

#### E. Stump cutters.

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged stump cutters shall be removed from service and tagged until repaired or discarded.
2. Stump cutters shall be equipped with enclosures or guards that reduce the risk of injury during operation. Enclosures or guards shall be kept in place when stump cutters are operative.
3. Arborists and other workers in the immediate stump-cutting work zone shall wear vision, hearing, and other personal protective equipment in accordance with 16VAC25-73-40 D.
4. When in a towing position, stump-cutter safety chains shall be crossed under the tongue of the stump cutter and properly affixed to the towing vehicle.
5. Towable stump cutters or stump-cutter trailers, when detached from the vehicle, shall be chocked or otherwise secured in place.
6. The operator shall be aware of underground utility locations prior to performing work.

#### F. Vehicles.

1. The items contained in subsection A of this section shall always be included in the review of this section. (See 16VAC25-60-120.) Damaged vehicles shall be removed from service and tagged until repaired or discarded.
2. A steel bulkhead or equivalent protective devices shall be provided to protect workers from load shifts in vehicles carrying logs or other material.
3. Load-securing procedures shall be followed to prevent accidental shifting or discharge of logs or other materials from the vehicle during transport.
4. Logs or other material shall not overhang the sides; obscure taillights, brake lights, or vision; or exceed height limits per state and local requirements for bridges, overpasses, utility lines, or other overhead hazards.
5. To avoid the hazard of spontaneous combustion or the generation of undesirable odors, wood chips shall not be left in vehicles for extended periods.

#### G. Log loaders, knucklebooms, cranes, and related hoists

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged log loaders, knuckle booms, cranes and related hoists shall be removed from service and tagged until repaired or discarded.
2. Log loaders, cranes, and related hoisting equipment shall be inspected in accordance with applicable regulations as well as manufacturers' instructions and guidelines. Chokers, slings, and other means of lifting, lowering, or rigging equipment shall be inspected before each use. An inspection procedure checklist shall be available to the crew.
3. Operators of hoisting equipment shall be trained and shall maintain a minimum approach distance from energized conductors in accordance with Table 1 [~~or 2~~] of 16VAC25-73-50, or §§ 59.1-406 through 59.1-414, Overhead High Voltage Line Safety Act, as applicable. A spotter shall be used when work is being performed in proximity to electrical conductors. Personnel assigned to work in proximity to the tree removal shall be trained and follow guidelines for electrical hazards (see 16VAC25-73-50).
4. The crane operator shall be familiar with the potential hazards encountered and operational techniques used in tree work.
5. Cranes with telescoping booms shall be equipped with an anti-two block device. A boom angle indicator and a device to indicate the boom's extended length shall be clearly visible to the operator at all times. A load rating chart with clearly legible letters and figures shall be provided with each crane and securely fixed at a location easily visible to the operator.
6. Operators of hoisting equipment shall remain at the controls while a load is lifted, suspended, or lowered.
7. Tree sections shall be rigged to minimize load shifting. Controlled load lowering shall be employed. Shock-loading shall be avoided, and free fall is prohibited. A green log weight chart (see 16 VAC25-73-130, Appendix D), shall be available to the crew. All workers shall be kept clear of loads about to be lifted and of suspended loads.
8. Riding the load line of a crane while it is under load tension shall be prohibited.
9. The use of a crane to hoist a qualified arborist into position is prohibited, except when the use of conventional means of reaching the work area, such as, but not limited to, an aerial lift, would be more hazardous or is not physically possible because of worksite conditions. If the above exception applies, a qualified arborist may be hoisted into position utilizing a crane if the crane manufacturer's specifications and limitations do not prohibit such use, and any fall protection requirements of the crane manufacturer are complied with, and the arborist is tied in with an arborist climbing line and arborist saddle and secured to a designated anchor point on the boom line or crane. The following procedures shall be followed when an arborist is to be lifted by a crane:
  - a. The qualified crane operator, the signal person, the person responsible for the work to be performed and the arborist to be lifted shall meet prior to the work to review the procedures to be followed. A job briefing shall be done before any work begins, in accordance with 16VAC25-73-40 A 4.
  - b. The arborist climbing line shall be secured to the crane in such a way that it does not interfere with the function of any damage-prevention or warning device on the crane and so that no part of the crane compromises the climbing line or any component of the climbing system.
  - c. The crane operator shall test the adequacy of footing prior to any lifting, and shall conduct a trial lift immediately before lifting the arborist into position. The crane operator shall determine that all systems, controls and safety devices are activated and functioning properly; that no interferences exist; and that all configurations necessary to reach the intended work location will allow the operator to remain under the 50% limit of the hoist's rated capacity. The crane shall be uniformly level and located on firm footing. If

necessary, blocking shall be used so that the support system does not exceed its load-bearing capabilities. Cranes equipped with outriggers shall have them all fully extended and properly set, as applicable, before lifting and lowering operations begin and/or before the qualified arborist is lifted.

d. Lifting and supporting shall be done under controlled conditions and under the direction of a qualified arborist or an appointed signal person. Lifting and supporting operations shall not be performed during adverse weather conditions such as thunderstorms, high winds, and snow and ice storms.

e. The load-line hoist drum shall have a system or other device on the power train, other than the load hoist brake, that regulates the lowering speed of the hoist mechanism. Load lines shall be capable of supporting, without failure, at least seven times the maximum intended load, except that where rotation resistant rope is used, the lines shall be capable of supporting without failure, at least 10 times the maximum intended load. The required design factor is achieved by taking the current safety factor of 3.5 and applying 50% de-rating of the crane capacity.

f. Communication between the crane operator and the arborist being lifted shall be maintained either directly or through the appointed signal person. This communication shall either be visual, using the accepted hand signals, or audible, using voice or radio. Radio communication shall be used to control blind picks. The crew members shall know and follow hand signals for standard crane operations (see 16VAC25-73-150, Appendix F).

g. The crane operator shall remain at the controls when the qualified arborist is attached to the crane and during lifting and lowering operations.

h. The crane boom and load line shall be moved in a slow, controlled, cautious manner when the arborist is attached. Lifting or lowering speed shall not exceed 100 feet/minute (0.5 m/sec), and any sudden movements shall be avoided. The crane shall be operated so that lowering is power controlled.

i. The crane carrier shall not travel at any time while the qualified arborist is attached. An accurate determination of the load radius to be used during lifting shall be made before the qualified arborist is hoisted.

j. The qualified arborist shall be detached from the crane any time it comes under load tension.

#### H. Specialized units.

1. The items contained in subsection A of this section shall always be included in the review of this section.

2. Off-road and tracked vehicles shall be operated at the proper speed and in the proper gear relative to the operating environment and the manufacturer's instructions and guidelines.

3. Deadman controls on towing equipment for brush hogs and similar implements shall be used and maintained in good working condition. If the deadman control is malfunctioning or not operational, the equipment shall be removed from service and tagged until it has been repaired or discarded. When deadman controls were not provided by the manufacturer, the worker shall disengage the power source to the rotary or cutter head before dismounting.

#### I. Equipment-mounted winches.

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged equipment mounted winches shall be removed from service and tagged until repaired or discarded.

2. Operators shall wear the appropriate personal protective equipment during winch operations, including eye and head protection.



3. The winch cable/synthetic line shall be inspected daily for broken or worn strands, bird caging, major kinks, and other defects. Damaged cables shall be removed from service and tagged until repaired or discarded.
4. Cable hooks and attachment points shall be inspected for damage. Damaged hooks or attachment assemblies shall be removed from service and tagged until repaired or discarded.
5. All mounting bolts and hardware shall be inspected for loose or missing components. The winch shall not be used until complete repairs are made to damaged or missing bolts and hardware.
6. Operators shall be aware of the dangers of load or cable breakage and ensure that all personnel remain clear of the recoil area in the event of load or cable breakage.
7. All winch operators shall be properly trained and be aware of the inherent dangers associated with winch operations.
8. Operators shall be aware of the winch cable at all times during extension and ensure that it does not become a hazard to personnel or machinery.
9. Winch systems and cables shall be used only as intended and instructed by the manufacturer.
10. The winch shall never be used with personnel, including the operator, within the span of the winch cable and the winch.
11. Pinch point hazards develop during winching operations; therefore, all operators involved in the winching operation shall constantly be aware of such hazards and stand clear of these areas.
12. All loads shall be pulled in such a manner as to avoid angles that may result in tipping, cause the vehicle to become unstable, or result in unintended movement of the vehicle.
13. Pulling loads from the side requires special equipment and techniques. Therefore, loads shall be pulled in line with the winch unless the winch is properly equipped with a fair lead and the operator is trained to pull loads at an angle.
14. The operator shall ensure that the vehicle supporting the winch is secured to avoid unintended movement.
15. The operator shall ensure that all rigging points comply with 16VAC25-73-90 D.
16. To ensure precise communication, an effective means of communication shall be established and used with all workers involved in the winching operations (see 16VAC25-73-90 D 14).

**16VAC25-73-70. Portable power hand tools.**

A. General.

1. The purpose of this section is to provide guidelines for arborists and other workers pertaining to the safe use and care of portable power hand tools. Damaged portable power tools shall be removed from service and tagged until repaired or discarded.
2. Manufacturers' operating and safety instructions shall be followed (see 16VAC25-60-120).
3. Before starting or otherwise using any portable power tools, a communication system shall be established in accordance with the requirements of 16VAC25-73-90 B 1.

B. Portable electric power tools.

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged portable electric power tools shall be removed from service and tagged until repaired or discarded.
  2. Corded electric power tools shall not be used in trees or aerial devices near energized electrical conductors where there is a possibility of power tools or supply cords contacting the conductor.
  3. All corded portable electric power tools shall be:
    - a. Equipped with three-wire cords having the ground wire permanently connected to the tool frame and a means for grounding the other end;
    - b. Double insulated and permanently labeled as "double insulated"; or
    - c. Connected to power supplies by means of an isolating transformer or other isolated power supply.
  4. Extension cords shall be maintained in safe condition. Exposed metal sockets shall not be used. Worn or frayed extension cords shall be removed from service and tagged until repaired or discarded.
  5. Arborists and other workers shall:
    - a. Prevent cords from becoming entangled, damaged, or cut by blades and bits;
    - b. Not lay extension cords in water; and
    - c. Support electric power tools and supply cords by a tool lanyard or separate line, when used aloft.
- C. Chain saws.
1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged chain saws shall be removed from service and tagged until repaired or discarded.
  2. Chain saws shall not be operated unless the manufacturer's safety devices are in proper working order. Chain-saw safety devices shall not be removed or modified.
  3. When an arborist or other worker is working in a tree other than from an aerial device, chain saws weighing more than 15 pounds (6.8 kg) service weight shall be made safe against falling (i.e., supported by a separate line or tool lanyard).
  4. Secure footing shall be maintained when starting the chain saw.
  5. When starting a chain saw, the operator shall hold the saw firmly in place on the ground or otherwise support the saw in a manner that minimizes movement of the saw when pulling the starter handle. The chain saw shall be started with the chain brake engaged, on saws so equipped. Drop-starting a chain saw is prohibited.
  6. Chain-saw engines shall be started and operated only when other arborists and workers are clear of the swing radius of the chain saw.
  7. When operating a chain saw, the arborist or other worker shall hold the saw firmly with both hands, keeping the thumb and fingers wrapped around the handle.
  8. Arborists shall use a second point of attachment (for example, lanyard or doublecrotched climbing line) 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 a chain saw in that particular situation. Using both ends of a two-in-one lanyard shall not be considered two points of attachment when using a chain saw.
  9. Chain-saw mufflers and spark arresters (if the latter are provided) shall be maintained in good condition.

10. The chain brake shall be engaged, or the engine shut off, before setting a chain saw down.
  11. When a chain saw is being carried more than two steps, the chain brake shall be engaged or the engine shut off. The chain saw shall be carried in a manner that will prevent operator contact with the cutting chain and the muffler.
  12. The chain-saw operator shall be certain of footing before starting to cut. The chain saw shall not be used in a position or at a distance that could cause the operator to become off-balance, have insecure footing, or relinquish a firm grip on the saw.
- D. Powered pole tools and backpack power units.
1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged powered pole tools and backpack power units shall be removed from service and tagged until repaired or discarded.
  2. Only workers operating the equipment shall be within 10 feet (3.05 m) of the cutting head of a brush saw during operations.
  3. Power units shall be equipped with a readily accessible, quick shutoff switch.
  4. Operators shall observe the position of all other workers in the vicinity while the equipment is running.
  5. Engines shall be stopped for all cleaning, refueling, adjustments, and repairs to the saw or engine, except where manufacturers' procedures require otherwise.
  6. Powered pole tools with poles made of metal or other conductive material shall not be used in operations where electrical hazards exist.

**16VAC25-73-80. Hand tools and ladders.**

A. General.

1. Correct hand tools and equipment shall be selected for the job.
2. Hand tools and equipment that have been made unsafe by damage or defect, including tools with loose or cracked heads or cracked, splintered, or weakened handles, shall be removed from service and tagged until repaired or discarded.
3. Workers shall maintain a safe working distance from other workers when using hand tools and equipment.
4. When climbing into a tree, arborists shall not carry hand tools and equipment in their hands unless the tools are used to assist them in climbing. Tools other than ropes or throwlines shall not be thrown into a tree or between workers aloft.
5. Arborist climbing lines or handlines shall be used for raising and lowering hand tools and equipment. Arborists shall raise or lower hand tools and equipment in a manner such that the cutting edge will not contact the arborist climbing line or handline.
6. Hand tools and equipment shall be properly stored or placed in plain sight out of the immediate work area when not in use.

B. Cant hooks, cant dogs, peaveys, and tongs.

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged cant hooks, cant dogs, peaveys and tongs shall be removed from service and tagged until repaired or discarded.

2. Cant hooks shall be firmly set before applying force.
3. Points of hooks shall be at least two inches (5 cm) long and kept sharp.
4. Arborists and other workers shall always stand uphill from rolling logs, and all workers shall be warned and in the clear before logs are moved.

C. Wedges, chisels, and gouges.

1. The items contained in subsection A of this section shall always be included in the review of this section.
2. Wedges, chisels, and gouges shall be inspected for cracks and flaws before use. Tools with damaged heads shall be removed from service and tagged until repaired or discarded.
3. Wedges and chisels shall be properly pointed and tempered.
4. Eye protection shall be used during impact operations.
5. Only wood, plastic, or soft-metal wedges shall be used while operating chain saws.
6. Wood-handled chisels shall be protected with a ferrule on the striking end.
7. Wood, rubber, or high-impact plastic mauls, sledges, or hammers shall be used when striking wood-handled chisels or gouges.

D. Chopping tools.

1. The items contained in subsection A of this section shall always be included in the review of this section. Damaged chopping tools shall be removed from service and tagged until repaired or discarded.
2. Chopping tools shall not be used while working aloft.
3. Chopping tools shall not be used as wedges or used to drive metal wedges.
4. Chopping tools shall be swung away from the feet, legs, and body, using the minimum force practical for function and control.
5. When swinging tools such as grub hoes, mattocks, and axes, a secure grip, firm footing, and clearance of workers and overhead hazards shall be maintained.

E. Ladders.

1. The items contained in subsection A of this section shall always be included in the review of this section.
2. Ladders made of metal or other conductive material shall not be used where electrical hazards exist. Only wooden ladders or nonconductive ladders made of synthetic material equal to or exceeding the strength of wooden ladders shall be used. Portable wooden ladders shall be used in accordance with 16VAC25-90-1910.25.
3. Metal ladders used where no electrical hazard exists shall be used in accordance with 16VAC25-90-1910.26.
4. All ladders shall be inspected before use and removed from service if found defective, and tagged until repaired or discarded.
5. Cleats, metal points, skid-resistant feet, lashing, or other effective means of securing the ladder shall be used.
6. Ladders shall not be used as bridges or inclined planes to load or handle logs or other material.

7. Ladders shall be supported while in storage to prevent sagging. Except when on mobile equipment, ladders shall be stored under suitable cover, protected from the weather, and kept in a dry location away from excessive heat.
8. The third, or hinged, leg of a tripod/orchard ladder shall be braced or fastened when on hard or slick surfaces.
9. All ladders shall be used in accordance to the manufacturers' specifications and limitations and shall not be altered in a way that contradicts those specifications and limitations.

**16VAC25-73-90. Work procedures.**

**A. Ropes and arborist climbing equipment.**

1. A visual hazard assessment, including a root collar inspection, shall be performed prior to climbing, entering, or performing any work in a tree, and an ongoing hazard assessment shall be conducted as operations progress while the arborist is in the tree. If the hazard assessment reveals a serious hazard to the climber or ground personnel, work shall immediately stop and personnel shall be removed from the hazardous area until a work plan is developed to safely remove the hazard/tree. The following items, at a minimum shall be inspected:
  - a. Trunk and root hazards including, but not limited to, cracks, cavities, wood decay/rot, cut roots, mushrooms;
  - b. Lower stem hazards including, but not limited to, loose bark, open cavities, cracks, mushrooms, conks, and depressions or swelling in the stem;
  - c. Limb hazards including, but not limited to, watersprouts, hangers, cankers, dead branches, lightning damage, and weak crotches; and
  - d. Storm damage hazards including, but not limited to, cracked stems and crotches, broken limbs supported by cables, points of pressure, and tension on limbs or small trees underneath larger fallen trees.
2. A second arborist or other worker trained in emergency procedures shall be within visual or voice communication during arboricultural operations above 12 feet (3.65 m) that are not subject to the requirements of 16VAC25-73-50 B 4.
3. Climbing lines used in a split-tail system and split-tails shall be terminated with an eye splice or a knot that interfaces appropriately with the connecting link that it is attached to. The termination knot selected shall remain secure under normal loading and unloading. When using a carabiner without a captive eye, the knot or eye splice shall cinch in place to prevent accidental opening and/or side-loading of the carabiner.
4. Arborists shall inspect climbing lines, worklines, lanyards, and other climbing equipment for damage, cuts, abrasion, and/or deterioration before each use and shall remove them from service if signs of excessive wear or damage are found. The items removed from service shall be tagged until repaired or discarded.
5. Arborist saddles and lanyards used for work positioning shall be identified by the manufacturer as suitable for tree climbing.
6. Arborist saddles and lanyards used for work positioning shall not be altered in a manner that would compromise the integrity of the equipment.
7. Hardware used in the manufacture of arborist saddles shall meet the hardware material, strength, and testing requirements outlined in ANSI 359.1.

8. Arborist climbing lines shall have a minimum diameter of 7/16 (11 mm) and be constructed from a synthetic fiber, with a minimum breaking strength of 5,400 pounds (24.02 kilonewtons (kN)) when new. Maximum working elongation shall not exceed 7.0% at a load of 540 pounds (2.402 kN). Arborist climbing lines shall be identified by the manufacturer as suitable for tree climbing.

9. ~~[All components of a climbing system (e.g., ropes, pulleys, etc.) shall meet the manufacturer's design, specifications, and limitations. Components from different climbing systems shall not be combined without prior approval of the manufacturers. The qualified arborist shall assure that each component of the climbing system is approved by the manufacturer for its intended use as well as its compatibility with other components of the climbing system.]~~

10. Prusik loops, split-tails, and work-positioning lanyards used in a climbing system shall meet the minimum strength standards for arborist climbing lines.

11. Snap hooks (rope snaps) used in climbing shall be self-closing and self-locking, with a minimum tensile strength of 5,000 pounds (22.24 kN).

12. Carabiners used in climbing shall be self-closing and self-locking, with a minimum tensile strength of 5,000 pounds (22.24 kN).

Carabiners shall be designed to release the load by requiring at least two consecutive, deliberate actions to prepare the gate for opening.

13. Splicing shall be done in accordance with cordage manufacturers' specifications.

14. All load-bearing components of the climbing system shall meet the minimum standards for arborist climbing equipment.

15. Equipment used to secure an arborist in the tree or from an aerial lift shall not be used for anything other than its intended purpose.

The arborist climbing line may be used to raise and lower tools.

16. Rope ends shall be finished in a manner to prevent raveling.

17. Ropes and climbing equipment shall be stored and transported in such a manner to prevent damage through contact with sharp tools, cutting edges, gas, oil, or chemicals.

18. Arborist climbing lines shall never be left in trees unattended.

19. Arborists shall have available a climbing line and at least one other means of being secured while working aloft; for example, an arborist climbing line and a work-positioning lanyard.

20. The arborist shall be secured while ascending the tree. The arborist shall be tied in once the work begins and shall be tied in until the work is completed and he has returned to the ground. The arborist shall be secured when repositioning the climbing line.

21. While ascending a ladder to gain access to a tree, the arborist shall not work from or leave the ladder until he is tied in or otherwise secured.

22. A false crotch and/or false crotch redirect may be used at the discretion of the arborist in lieu of a natural crotch.

23. The tie-in position shall be such that the arborist will not be subjected to an uncontrolled pendulum swing in the event of a slip.

24. When a climber is working at heights greater than one-half the length of the arborist climbing line, a figure-8 knot shall be tied in the end of the arborist climbing line to prevent pulling the rope through the climbing hitch.

**B. Pruning and trimming.**

1. Voice communications among arborists aloft and among arborists and other workers on the ground shall be established before cutting and dropping limbs. The communication method shall be clearly understood and used by all workers during all operations. The command "stand clear" from aloft and the response "all clear," "Underneath," or "No" from the ground are terms that may be used for this purpose. Prearranged, two-way hand signals may also be used when verbal communication is not possible because of distance or surrounding noise levels. Arborists and other workers returning to the work area shall be acknowledged by arborists aloft.
2. Pole pruners and pole saws, when hung, shall be securely positioned to prevent dislodgment. Pole pruners or pole saws shall not be hung on electrical conductors or left in a tree unattended. Pole saws and pole pruners shall be hung so that sharp edges are away from the arborist and shall be removed when the arborist leaves the tree.
3. Scabbards or sheaths shall be used to carry handsaws when not in use. Folding saws, when not in use, shall be closed and hooked to the arborist saddle.
4. Pole tools used in line-clearance operations shall be constructed with fiberglass reinforced plastic (FRP) or wooden poles meeting the requirements of 16VAC25-90-1910.269.
5. A separate workline shall be attached to limbs that cannot be dropped safely or controlled by hand. Arborist climbing lines and worklines shall not be secured to the same crotch.
6. Dry conditions and dead palm fronds present an extreme fire hazard. When dry conditions exist, arborists and other workers shall not smoke while working in or near dead palm fronds. All chain saws used under such conditions shall have mufflers and spark arresters in good working condition.
7. Palm frond skirts that have three years or more of growth shall be removed from the top down. Arborists performing this work shall be supported by an arborist climbing line and a false crotch. Arborists shall never attempt to remove skirts of three years or more by positioning themselves below work areas while being supported by a lanyard.
8. Cut branches shall not be left in trees upon completion of work.

**C. Cabling.**

1. Arborists and other workers on the ground shall not stand under the work area of a tree when a cabling system is being installed.
2. Tools used for cabling, bark tracing, and cavity work shall be carried in a bag, on a belt designed to hold such tools, or attached to a tool lanyard.
3. Arborists installing cabling systems in trees shall be positioned off to one side in order to avoid injury in case of cable system failure that could occur when a block and tackle or a hand winch is released.
4. When removing a cable from a tree, a block and tackle or come-along system shall be installed before removing the existing cable.
5. When installing a replacement cable, the replacement cable shall be fully installed before removing the outdated cable.

**D. Rigging.**

1. Arborists performing rigging operations shall inspect trees for their integrity to determine whether the trees have any visible defect that could affect the operation. If it is determined that the tree poses a risk of failure due to the forces and strains that will be created by the design of the rigging operation, an alternate plan shall be used that does not expose workers to the hazards of a failure.

2. The number of connecting links used for connecting components of a rigging system shall be minimized when possible. Connecting links shall interface properly and be in compliance with manufacturers' specifications and limitations (reference 16VAC26-60-120).
3. The qualified arborist shall ensure that load ratings shown on the rigging equipment or provided by the manufacturer for all ropes, connecting links, and rigging equipment are observed in all rigging operations. Rigging equipment shall be chosen for the specific task based on working-load limits and design specifications.
4. All equipment used for rigging operations shall be in good working condition. Equipment that has been damaged or overloaded shall be removed from service. Items removed from service shall be tagged until repaired or discarded.
5. To avoid confusion between rigging equipment and climbing equipment, the equipment shall be clearly marked to indicate their different purposes.
6. Rigging points shall be assessed for their structural integrity by a qualified arborist. The rigging plan and the tree shall be considered relative to the forces being applied to any part of the tree, including branch attachments and anchoring roots, before a rigging point is chosen and established.
7. Climbers shall choose tie-in points that will provide proper protection while allowing for a separation between the rigging system and the climbing system. Running rigging lines shall not be allowed to come into contact with any part of the climbing system.
8. Arborists performing rigging operations shall be educated to understand and trained to estimate the potential forces at any point in the rigging system being used. The system components shall comply with working-load limits relative to the operation and the maximum potential forces.
9. Careful consideration shall be given to the potential forces resulting from the specific influences of rope angles as well as the number of lines and/or line parts that will act on any rigging point.
10. Prior to the start of removal/rigging operations, a communication system shall be established in accordance with the requirements in subdivision B 1 of this section.
11. A work zone shall be established prior to the start of rigging operations. Workers not directly involved in the rigging operation shall stay out of the pre-established work zone until it has been communicated by a qualified arborist or qualified arborist trainee directly involved in the rigging operation that it is safe to enter the work zone. Workers shall be positioned and their duties organized so that the actions of one worker will not create a hazard for any other worker.
12. Only qualified arborists or qualified arborist trainees directly involved in the operation shall be permitted in the work zone when a load is being suspended by the rigging system. All workers shall be kept clear of suspended loads.
13. Taglines or other means may be used to help control and handle suspended loads.
14. Arborists working aloft shall position themselves so as to be above or to the side of the piece being rigged and out of the path of movement of the piece when it has been cut. Climbers and their climbing systems shall be positioned outside of the rigging system itself when a cut is being made or a load is being moved or lowered. Climbers shall have an escape plan prepared.
15. The spars, limbs, or leaders being worked on and the spars being used for tie-in and/or rigging points shall be assessed for structural integrity and potential reaction forces that could cause a spar to split when it is cut.
16. Steps shall be taken to prevent spars from splitting or tearing during the rigging operation, and climbers shall take steps to avoid trapping, pinning, or entangling themselves in the system should the tree split or the rigging fail. Load binders are one possible means of preventing splitting.



## E. Tree removal.

1. Before beginning any tree removal operation, the chain-saw operator and/or crew leader shall carefully consider all relevant factors pertaining to the tree and site and shall take appropriate actions to ensure a safe removal operation. The following factors shall be considered:

- a. The area surrounding the tree to be removed, including nearby trees;
- b. Species and shape of the tree;
- c. Lean of the tree;
- d. Loose limbs, chunks, or other overhead material;
- e. Wind force and direction;
- f. Decayed or weak spots throughout the tree (be aware of additional hazards if these conditions exist in the hinge area);
- g. Location and means to protect other persons, property, and electrical conductors;
- h. Size and terrain characteristics or limitations of the work area; and
- i. Evidence of bees or wildlife habitation in the tree.

2. Work plans for removal operations shall be communicated to all workers in a job briefing before commencing work.

3. Workers not directly involved in the removal operation shall be clear of the work area, beyond the length of the tree, unless a team of workers is necessary to remove a particular tree.

4. A planned escape route for all workers shall be prepared before cutting any standing tree or trunk. The preferred escape route is 45 degrees on either side of a line drawn opposite the intended direction of the fall. Obstructions shall be cleared along the escape path. The chain-saw operator shall use this path for egress once the cut has been completed.

5. When it is necessary to shorten or remove branches before removing the tree, the arborist shall determine whether the tree can withstand the strain of the lowering procedures. If not, other means of removing the tree shall be considered and used.

6. The crew leader shall determine the number of workers necessary for tree removal operations.

7. The crew leader shall develop a work plan so that operations do not conflict with each other, thereby creating a hazard.

8. Climbing spurs shall have gaffs of a type and length compatible for the tree being climbed.

9. Wedges, block and tackle, rope, wire cable (except where an electrical hazard exists), or other appropriate devices shall be used when there is a danger that the tree or trees being removed may fall in the wrong direction or damage property. All limbs shall be removed to a height and width sufficient to allow the tree to fall clear of any wires and other objects in the vicinity.

10. Tackle blocks and pulleys and their connecting links shall be inspected immediately before use and removed from service if they are found to be defective.

11. Workers returning to the work area shall not enter until the chain-saw operator has acknowledged that it is safe to do so.

12. When a pull line is being used, workers involved in removing a tree or trunk shall be clear by a minimum of one tree length.

13. All workers other than the individual engaged in manual land-clearing operations shall be at least two tree lengths away from the tree or trunk being removed. This requirement does not apply in the presence of site restrictions, such as waterways or cliffs. Other arborists and workers shall be beyond the trees' striking range and at a distance as close to twice the tree's height as possible.

NOTE: This regulation does not apply to tree removal activities where the primary objective is land clearing in preparation for construction, real estate development, or other related activities, unless directly supervised by a [eertified qualified] arborist. Such activities are covered by 16VAC25-90-1910.266.

14. Notches shall be used on all trees and trunks greater than five inches (12.7 cm) in diameter at breast height.

15. Notches and back cuts shall be made at a height that enables the chain-saw operator to safely begin the cut, control the tree or trunk, and have freedom of movement for escape:

- a. The notch cut used shall be a conventional notch, an open-face notch, or a Humboldt notch.
- b. Notches shall be 45 degrees or greater and large enough to guide the fall of the tree or trunk to prevent splitting.
- c. Notch depth shall not exceed one-third the diameter of the tree.
- d. The back cut shall not penetrate into the predetermined hinge area.

16. With a conventional notch or Humboldt notch, the back cut shall be one to two inches (2.5 to 5 cm) above the apex of the notch to provide an adequate platform to prevent kickback of the tree or trunk. With an open-face notch (greater than 70 degrees), the back cut shall be at the same level as the apex of the notch.

17. The two cuts that form the notch shall not cross at the point where they meet.

18. Before making the back cut, there shall be a command such as "stand clear" from the arborist operating the chain saw and a response such as "all clear" from the workers supporting the removal operation. Pre-arranged, two-way hand signals may also be used in accordance with subdivision B 1 of this section. Only designated persons shall give such signals. All workers in the vicinity shall be out of range when the tree or trunk falls. Visual contact shall be maintained with the tree or trunk until it is on the ground.

19. When the back cut has been completed, the chain-saw operator shall immediately move a safe distance away from the tree or trunk using the planned escape route.

20. Workers shall not approach mechanical tree removal or mechanical re-clearing operations, such as with a rotary or flail mower, until the operator has acknowledged that it is safe to do so.

#### F. Brush removal and chipping.

1. Traffic control around the jobsite shall be established prior to the start of chipping operations along roads and highways (see 16VAC25-73-40 B).

2. Brush and logs shall not be allowed to create hazards in the work areas.

3. To prevent an entanglement hazard, loose clothing, climbing equipment, body belts, harnesses, lanyards, or gauntlet-type gloves (for example, long-cuffed lineman's or welder's gloves) shall not be worn while operating chippers.

4. Personal protective equipment shall be worn when in the immediate area of chipping operations in accordance with 16VAC25-73-40 D.

5. Training shall be provided in the proper operation, feeding, starting, and shutdown procedures for the chipper being used.

6. Maintenance shall be performed only by those persons authorized by the employer and trained to perform such operations.
7. Brush and logs shall be fed into chippers, butt or cut end first, from the side of the feed table center line, and the operator shall immediately turn away from the feed table when the brush is taken into the rotor or feed rollers. Chippers shall be fed in accordance with the manufacturer's instructions.
8. The brush chipper discharge chute or cutter housing cover shall not be raised or removed while any part of the chipper is turning or moving. Chippers shall not be used unless a discharge chute of sufficient length or design is provided that prevents personal contact with the blades (see 16VAC25-73-110, Appendix B, General Safety Procedures that Apply to All Tree Work).
9. Foreign material, such as stones, nails, sweepings, and rakings, shall not be fed into chippers.
10. Small branches shall be fed into chippers with longer branches or by being pushed with a long stick.
11. Hands or other parts of the body shall not be placed into the infeed hopper. Leaning into or pushing material into infeed hoppers with feet is prohibited.
12. While material is being fed into the chipper infeed hopper chute, pinch points continually develop within the material being chipped and between the material and machine. The operator shall be aware of this situation and respond accordingly.
13. When feeding a chipper during roadside operations, the operator shall do so in a manner that prevents him from stepping into traffic or being pushed into traffic by the material that is being fed into the chipper.
14. When using a winch in chipper operations, the operator shall ensure that the winch cable is properly stored before initiating chipper operations.
15. Refer to 16VAC25-73-60 C, for additional information.

#### G. Limbing and bucking.

1. Work plans for limbing and bucking operations shall be communicated to all workers in a job briefing before work begins.
2. When more than one worker is limbing or bucking a tree, each shall be positioned and their duties organized so that the actions of one worker will not create a hazard for any other worker.
3. Chain saws shall be operated away from the vicinity of the legs and feet. Natural barriers, such as limbs between the saw and the body, shall be employed where possible, while ensuring proper balance. While operating a chain saw, the preferred working position is on the uphill side of the work.
4. The worker shall make sure of firm footing before and during limbing and bucking.  
The worker shall not stand on loose chunks or logs that will roll when the log being bucked is sawed off.
5. Trees, limbs, or saplings under tension shall be considered hazardous. Appropriate cutting techniques and precautions shall be followed.
6. Wedges shall be used as necessary to prevent binding of the guide bar or chain when bucking trunks of trees.
7. Cant hooks or peaveys shall be used as an aid in rolling large or irregular logs to complete bucking.
8. If mechanized equipment is to be used, the equipment operator shall establish an effective means of communication with other workers (see subdivisions B 1 and D 10 of this section).

9. Workers shall not approach mechanized equipment operations until the equipment operator has acknowledged that it is safe to do so.

H. Pesticide application.

1. The applicator shall follow label instructions in regard to pesticide applications.
2. The applicator shall follow pesticide label instructions in regard to laundering his clothing.
3. The applicator shall comply with the manufacturer's instructions with regard to showering or bathing at the end of each workday.
4. The employer shall provide a clean water source at the worksite, which can be used for emergency personal decontamination. Precautions shall be taken to prevent contamination of the clean water source. Drinking water and decontamination water shall be kept in separate containers.
5. The applicator shall not direct a solid spray column into contact with electrical conductors.

**16VAC25-73-100. Appendix A (Informative): Recommended Guidelines for Standard Performance and Safety Training for Qualified Line-Clearance Arborists/Qualified Line-Clearance Arborist Trainees and Qualified Arborists/Qualified Arborist Trainees.**

NOTE: The content of this training outline is generic and may be customized to achieve equivalent levels of safe practice by substituting or, where deemed appropriate to the circumstances, omitting portions of this outline. Use or nonuse of training aids that may be available shall not be evidence of noncompliance with this regulation.

A. General requirements. Specific training in the area of individual expertise and work required of a qualified line-clearance arborist or qualified arborist shall be provided by the employer and documentation of training retained on file for the duration of employment.

1. Introduction and employer/employee responsibilities.
2. Employee orientation, to include:
  - a. Job description appropriate to job assignment (qualified line-clearance arborist or qualified arborist).
  - b. Introduction to immediate supervisor and crew members.
  - c. Familiarization with appropriate personal protective clothing and equipment and its proper use and maintenance.
  - d. Familiarization with equipment.
  - e. Introduction to company policies, procedures, and safe work practices.
  - f. Safe work practices as related to job assignments.
  - g. Written acknowledgment by employee that he has participated in such training.
3. Line-clearance or tree care pruning techniques appropriate to job assignments, as follows:
  - a. Provide education and training in accordance with prevailing national standards for utility pruning. Refer to recommended resources in 16VAC25-73-120 (Appendix C) for further information.
  - b. Provide education and training in accordance with prevailing local, state, or regional standards for utility pruning, as well as those specified by utility contracts.
  - c. Provide tree knowledge for line-clearance or tree care techniques appropriate to job assignments.

d. Provide education and training relative to predominant tree species within geographic area, such as identification, growth habits, structure, and wood strength.

e. Provide education and training for recognition and evaluation of potentially hazardous conditions related to tree structure. Refer to recommended resources in 16VAC25-73-120 (Appendix C).

#### B. General safety.

1. VOSH regulations. Familiarize employees with the requirements of VOSH regulations as applicable to employee job assignments. Refer to recommended resources in 16VAC25-73-120 (Appendix C).

2. American national standards. Familiarize employees with the requirements in ANSI A300 as applicable to employee job assignments. Refer to additional recommended standards in 16VAC25-73-120 (Appendix C).

3. Public safety and traffic control. Provide education and training in the use of public safety and traffic control devices as applicable under federal, state, or local regulations.

4. Electrical hazards. Provide education and training in the recognition and avoidance of electrical hazards applicable to employee job assignments (line-clearance or tree care).

5. Emergency conditions. Provide education and training in the proper procedures for safely performing work in emergency conditions applicable to employee job assignments.

6. Jobsite briefings. Provide education and training in jobsite-specific hazards associated with the job, work procedures, and practices involved. Instruct employees about special precautions, personal protective clothing, and equipment requirements as applicable to employee job assignments.

#### C. Personal safety.

1. Personal protective equipment. Provide personal protective equipment as required for applicable job assignments, and instruct employees in its proper use, fit, life, and maintenance.

2. Emergency response procedures. Furnish employees with appropriate information and training necessary to expedite a response to a worksite emergency, such as first aid, CPR, and aerial rescue (see 16VAC25-73-150, Appendix E, Aerial Rescue Flowchart).

3. Prevention of back and other injuries. Provide education and training in the techniques required to avoid back and other injuries applicable to job assignments.

4. Identification and avoidance of animals and poison plants. Provide education and training in the identification of and the need to avoid contact with poison plants and instructions for treating insect stings/bites and snake bites.

#### D. Equipment safety.

1. Mobile equipment and aerial lifts. Provide education and training in the inspection, operation, and maintenance of all vehicles and equipment, such as aerial lifts, brush chippers, stump grinders, log loaders, tree cranes, mowing equipment, and pesticide application equipment. All equipment shall comply with applicable federal and state regulations, local ordinances, and manufacturers' operating instructions (see 16VAC25-60-120). Such training shall be appropriate to employee job assignments.

2. Aerial equipment and electrical hazards. Provide education and training so that affected employees understand the required and recommended procedures for operating aerial devices in proximity to electrical hazards. Such training shall be appropriate to employee job assignments.

3. Chain saw, power tool, and hand tool use and safety. Provide education and training in the safe use of chain saws, power tools, and hand tools in accordance with manufacturers' instructions. Such training shall be appropriate to employee job assignments.

4. Climbing equipment use and safety. Provide education and training in the inspection, maintenance, and storage of climbing equipment such as ropes, saddles, personal lanyards, rope snaps, carabiners, and related equipment. Such training shall be appropriate to employee job assignments.

E. Operational safety.

1. Climbing techniques. Provide education and training in climbing techniques as appropriate to employee job assignments.

2. Rigging and tree removal:

a. Provide education and training appropriate to employee job assignments, such as knots and ropes, rigging techniques, tree strength and weight characteristics, and potential electrical hazards.

b. Provide education and training in the identification and removal of hazard trees. Such training shall be appropriate to employee job assignments.

3. Hazard communications. Provide education and training necessary to comply with federal and state regulations appropriate to employee job assignments.

4. Pesticide use. Provide education and training necessary to comply with federal and state regulations appropriate to employee job assignments.

**16VAC25-73-110. Appendix B (Informative): General Safety Procedures that Apply to All Tree Work.**

A. Lifting. Before lifting any weight, workers shall:

1. Be sure there is a clear path available if the weight is to be carried from one place to another;

2. Decide exactly how the object should be grasped to avoid sharp edges, splinters, or other factors that might cause injury;

3. Make a preliminary lift to be sure the load can be safely handled;

4. Place feet solidly on the walking surface;

5. Crouch as close to the load as possible, with legs bent at an angle of about 90 degrees;

6. Lift with the legs, not the back, keeping the weight as close to the body as possible; and

7. Use additional workers or material-handling equipment when necessary.

B. Control of hazardous energy. When a worker, hereafter referred to as the "authorized person," is doing mechanical work, precautions must be taken to prevent injury caused by moving or elevated parts, or the release of stored energy, such as hydraulic pressure. Failure to do so could result in a serious, potentially maiming, or fatal injury. The authorized person performing maintenance/repair shall comply with the employer's procedures. The specific Control of Hazardous Energy requirements established by VOSH may be obtained by consulting 16VAC25-90-1910.147.

1. The following is a sample procedure.

Sequence for Securing Equipment (Sample):

a. The authorized person shall notify the crew and/or affected employees that maintenance or repair is to be done and that such equipment must be shut down and secured.

b. The authorized person shall refer to the manufacturer's manual for proper procedures (as needed).

c. If equipment is in an operational mode, it shall be shut down by normal procedures.

- d. Rotating parts, such as chipper blades, shall be stopped before maintenance or repair. Keyed ignition systems must be in working order.
  - e. Keys shall be removed and pocketed by the foreman or mechanic. When there is no keyed ignition system, the battery cables or spark plug wires shall be disconnected.
  - f. The power takeoff shall be disengaged before beginning service or repair tasks, such as hose replacement. All hydraulic tools shall be disconnected before equipment is adjusted or serviced.
  - g. An employee shall never attempt to stop a hydraulic leak with his body.
  - h. Materials or parts that must be raised or disconnected and suspended shall be properly secured, such as with an appropriate sling or jackstand. Flywheels, such as chipper cutter heads, are to be blocked to prevent pinch points.
  - i. Before proceeding with maintenance or repair, the authorized person shall ensure that equipment is isolated and will not operate.
  - j. Any piece of equipment being serviced or repaired shall not be started, energized, or used by any other worker not under the direction of the authorized person.
  - k. When the engine must be running for tuning or adjustment, special care must be given to moving parts.
2. Restoring equipment to service (sample). When maintenance or repair is complete and equipment is ready to return to normal operation, the following steps shall be taken by the authorized person to restore the equipment to service:
- a. To prevent accidental contact with moving or electrical components when the equipment is engaged, check for loose parts or tools that may have been left in the immediate area.
  - b. Ensure that all guards are in place and employees are in the clear.
  - c. Confirm that controls are in neutral.
  - d. Reconnect key, cable, or plug wires.
  - e. Notify affected employees that equipment is ready to return to service.

**16VAC25-73-120. Appendix C (Informative): Additional Resources.**

A. Applicable American National Standards:

Fall protection systems for construction and demolition operations (A10.32-2004)

Personal fall arrest systems, subsystems, and components (Z359.1-1992 [R1999])

Protective headgear for industrial workers (Z89.1-2003)

Tree care operations—tree, shrub, and other woody plant maintenance (A300, Parts 1 through 7)

Vehicle-mounted elevating and rotating aerial devices (A92.2-2001)

B. Cordage Institute Rope Standards

The Cordage Institute, [www.ropecord.com](http://www.ropecord.com)

C. Applicable VOSH and U.S. Department of Labor/Federal Labor/Federal Motor Carrier Safety Administration Regulations

Electric Power Generation, Transmission, and Distribution, 16VAC25-90-1910.269

General Industry, 16VAC25-90-1910

Hazard Communication, 16VAC25-90-1910.1200

Medical Services and First Aid, 16VAC25-95 [PROPOSED REGULATION]

Occupational Noise Exposure, 16VAC25-90-1910.95

Personal Protective Equipment, 16VAC25-90-1910.132 to 16VAC25-90-1910.136

Electrical - Safety-Related Work Practices, 16VAC25-90-1910.331 to 16VAC25-90-1910.335

Telecommunication, 16VAC25-90-1910.268

Transportation (49 CFR, Subchapter B, Federal Motor Carrier Safety Regulations)

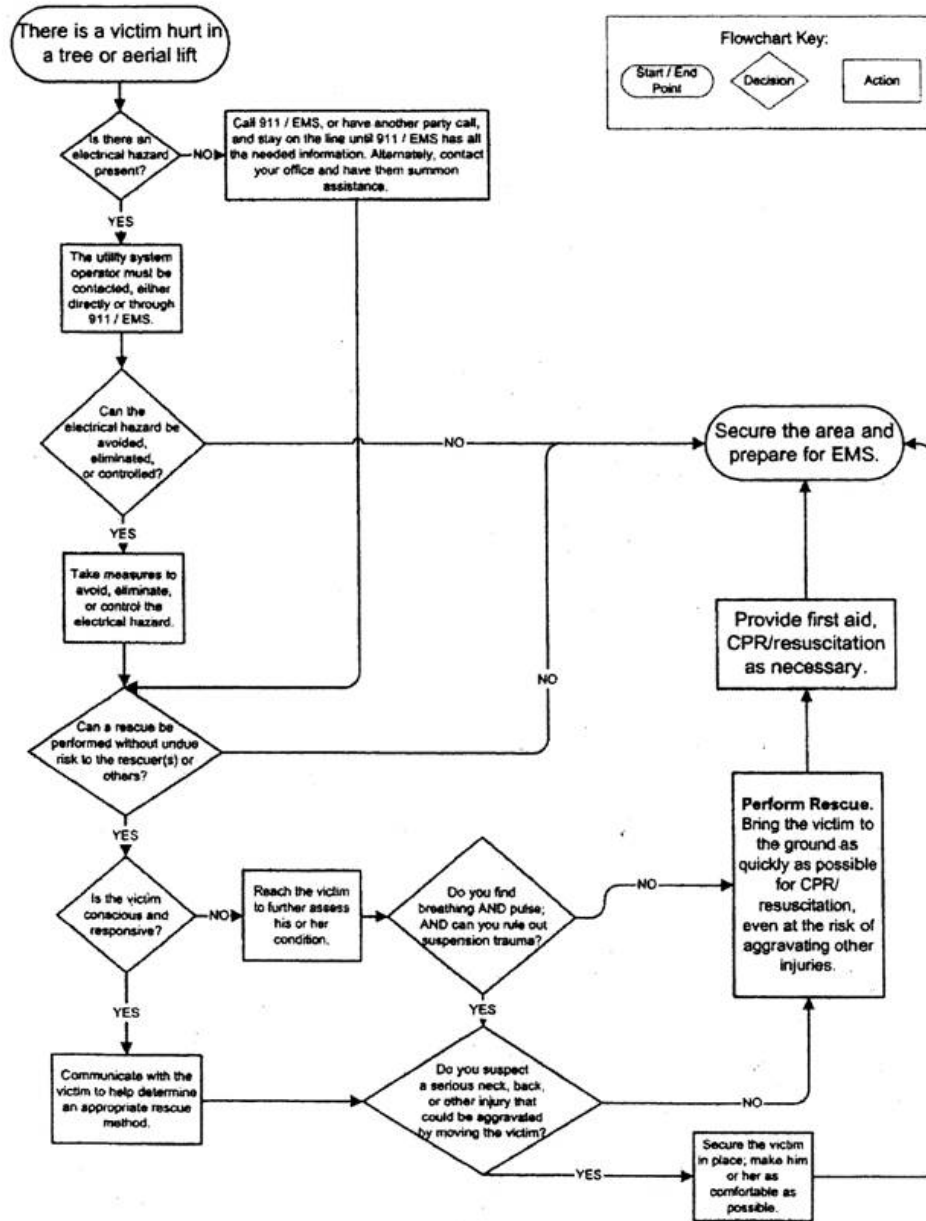


**16VAC25-73-130. Appendix D (Informative): Weight of Green Logs.**





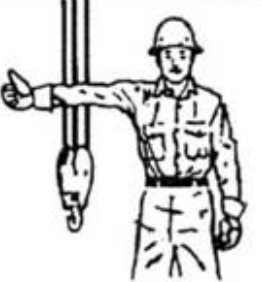

| Species                  | Weight,<br>lb per ft | <u>Weight of 1-ft section, based on average diameter</u> |     |     |     |     |     |     |     |
|--------------------------|----------------------|--|-----|-----|-----|-----|-----|-----|-----|
|                          |                      | 10"  | 12" | 14" | 16" | 18" | 20" | 22" | 24" |
| Alder, red               | 46                   | 25   | 36  | 49  | 64  | 81  | 100 | 121 | 144 |
| Ash, green               | 47                   | 25   | 37  | 50  | 66  | 83  | 102 | 124 | 148 |
| Ash, Oregon              | 48                   | 26   | 38  | 51  | 67  | 85  | 104 | 126 | 150 |
| Ash, white               | 48                   | 26   | 38  | 51  | 67  | 85  | 104 | 126 | 150 |
| Aspen, quaking           | 43                   | 23   | 34  | 46  | 60  | 76  | 94  | 114 | 135 |
| Baldcypress              | 51                   | 28   | 40  | 54  | 71  | 90  | 111 | 135 | 160 |
| Basswood                 | 42                   | 23   | 33  | 45  | 59  | 74  | 92  | 111 | 132 |
| Beech                    | 54                   | 29   | 42  | 58  | 75  | 95  | 118 | 142 | 169 |
| Birch, paper             | 50                   | 27   | 39  | 53  | 70  | 88  | 109 | 132 | 157 |
| Cedar, incense           | 45                   | 25   | 35  | 48  | 63  | 79  | 98  | 119 | 141 |
| Cedar, western red       | 28                   | 15   | 22  | 30  | 39  | 49  | 61  | 74  | 88  |
| Cherry, black            | 45                   | 25   | 35  | 48  | 63  | 79  | 98  | 119 | 141 |
| Chinaberry               | 50                   | 27   | 39  | 53  | 70  | 88  | 109 | 132 | 157 |
| Cottonwood               | 49                   | 27   | 38  | 52  | 68  | 86  | 107 | 129 | 154 |
| Elm, American            | 54                   | 29   | 42  | 58  | 75  | 95  | 118 | 142 | 169 |
| Fir, Douglas             | 39                   | 21   | 30  | 41  | 55  | 69  | 85  | 103 | 122 |
| Fir, noble               | 29                   | 16   | 23  | 31  | 41  | 51  | 63  | 77  | 91  |
| Fir, white               | 47                   | 25   | 37  | 50  | 66  | 83  | 102 | 124 | 148 |
| Gum, black               | 45                   | 25   | 35  | 48  | 63  | 79  | 98  | 119 | 141 |
| Gum, red<br>(Eucalyptus) | 50                   | 27   | 39  | 53  | 70  | 88  | 109 | 132 | 157 |
| Hackberry                | 50                   | 27   | 39  | 53  | 70  | 88  | 109 | 132 | 157 |
| Hemlock, eastern         | 49                   | 27   | 38  | 52  | 68  | 86  | 107 | 129 | 154 |
| Hemlock, western         | 41                   | 22   | 32  | 43  | 57  | 72  | 89  | 108 | 129 |
| Hickory, shagbark        | 64                   | 35   | 50  | 68  | 89  | 113 | 140 | 169 | 201 |
| Horsechestnut            | 41                   | 22   | 32  | 43  | 57  | 72  | 89  | 108 | 129 |
| Larch                    | 51                   | 28   | 40  | 54  | 71  | 90  | 111 | 135 | 160 |
| Locust, black            | 58                   | 32   | 45  | 62  | 81  | 102 | 126 | 153 | 182 |
| Locust, honey            | 61                   | 33   | 48  | 65  | 85  | 108 | 133 | 161 | 192 |
| Maple, red               | 50                   | 27   | 39  | 53  | 70  | 88  | 109 | 132 | 157 |
| Maple, silver            | 45                   | 25   | 35  | 48  | 63  | 79  | 98  | 119 | 141 |










|                       |    |    |    |    |     |     |     |     |     |
|-----------------------|----|----|----|----|-----|-----|-----|-----|-----|
| Maple, sugar          | 56 | 31 | 44 | 60 | 78  | 99  | 122 | 148 | 176 |
| Oak, California black | 66 | 36 | 51 | 70 | 92  | 116 | 144 | 174 | 207 |
| Oak, English          | 52 | 28 | 41 | 55 | 72  | 92  | 113 | 137 | 163 |
| Oak, live             | 76 | 41 | 60 | 81 | 106 | 134 | 166 | 200 | 238 |
| Oak, pin              | 64 | 35 | 50 | 68 | 89  | 113 | 140 | 169 | 201 |
| Oak, post             | 63 | 34 | 49 | 67 | 88  | 111 | 137 | 166 | 198 |
| Oak, red              | 63 | 34 | 49 | 67 | 88  | 111 | 137 | 166 | 198 |
| Oak, scarlet          | 64 | 35 | 50 | 68 | 89  | 113 | 140 | 169 | 201 |
| Oak, white            | 62 | 34 | 48 | 66 | 86  | 109 | 135 | 163 | 194 |
| Pecan                 | 61 | 33 | 48 | 65 | 85  | 108 | 133 | 161 | 192 |
| Persimmon             | 63 | 34 | 49 | 67 | 88  | 111 | 137 | 166 | 198 |
| Pine, eastern white   | 36 | 20 | 28 | 38 | 50  | 64  | 78  | 95  | 113 |
| Pine, loblolly        | 53 | 29 | 41 | 56 | 74  | 93  | 116 | 140 | 166 |
| Pine, lodgepole       | 39 | 21 | 30 | 41 | 55  | 69  | 85  | 103 | 122 |
| Pine, longleaf        | 55 | 30 | 43 | 58 | 77  | 97  | 120 | 145 | 173 |
| Pine, ponderosa       | 46 | 25 | 36 | 49 | 64  | 81  | 100 | 121 | 144 |
| Pine, slash           | 58 | 32 | 45 | 62 | 81  | 102 | 126 | 153 | 182 |
| Pine, sugar           | 52 | 28 | 41 | 55 | 72  | 92  | 113 | 137 | 163 |
| Pine, western white   | 36 | 20 | 28 | 38 | 50  | 64  | 78  | 95  | 113 |
| Poplar, yellow        | 38 | 21 | 30 | 40 | 53  | 67  | 83  | 99  | 119 |
| Redwood, coast        | 50 | 27 | 39 | 53 | 70  | 88  | 109 | 132 | 157 |
| Spruce, red           | 34 | 19 | 27 | 36 | 47  | 60  | 74  | 90  | 106 |
| Spruce, Sitka         | 32 | 17 | 25 | 34 | 45  | 56  | 70  | 84  | 100 |
| Sweetgum              | 55 | 30 | 43 | 58 | 77  | 97  | 120 | 145 | 173 |
| Sycamore              | 52 | 28 | 41 | 55 | 72  | 92  | 113 | 137 | 163 |
| Walnut, black         | 58 | 32 | 45 | 62 | 81  | 102 | 126 | 153 | 182 |
| Willow                | 32 | 17 | 25 | 34 | 45  | 56  | 70  | 84  | 100 |

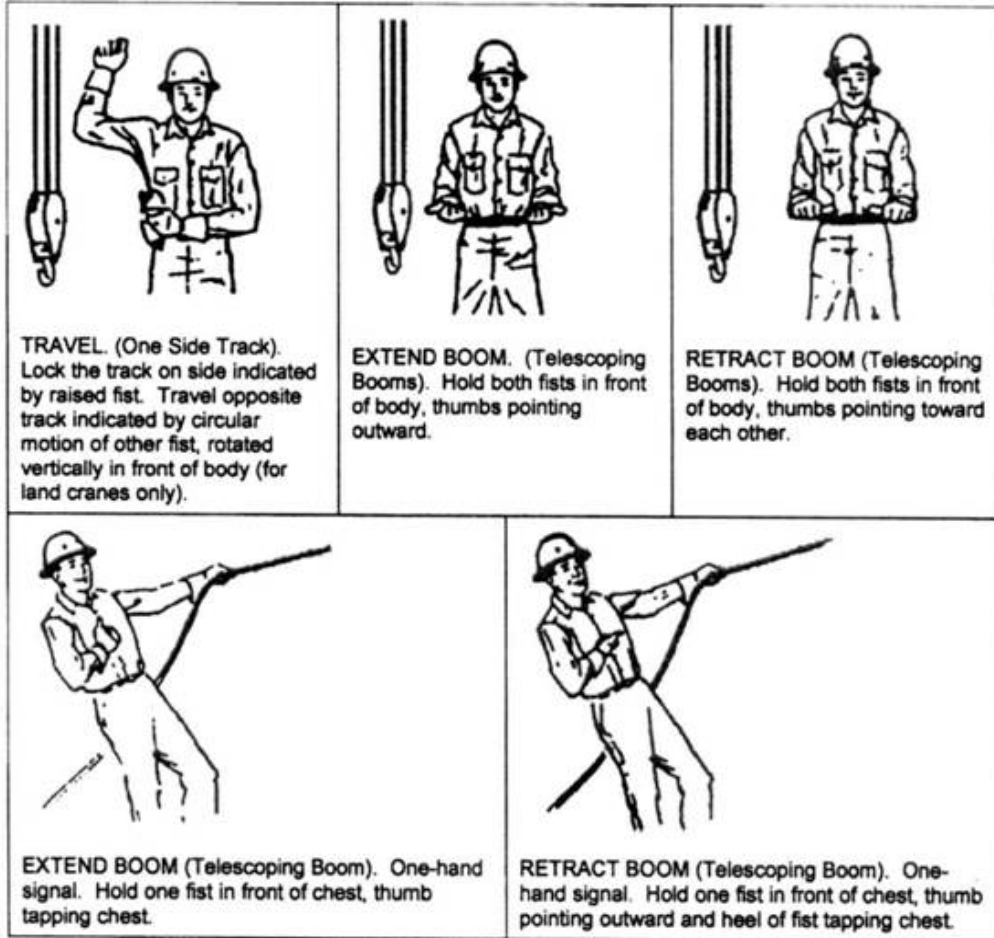
**16VAC25-73-140. Appendix E (Informative): Aerial Rescue Flowchart.**



**16VAC25-73-150. Appendix F (Informative): Hand Signal Chart for Crane Operations.**

|   |  |  |
|---|--|--|
|                    |                          |   |
| <p>HOIST. With forearm vertical, forefinger pointing up, move hand in small horizontal circles.</p> | <p>LOWER. With arm extended downward, forefinger pointing down, move hand in small horizontal circles.</p> | <p>USE MAIN HOIST. Tap fist on head, then use regular signals.</p>                   |
|                   |                         |  |
| <p>USE WHIPLINE. (Auxiliary Hoist) Tap elbow with one hand, then use regular signals.</p>           | <p>RAISE BOOM. Extend arm, fingers closed, thumb pointing upward.</p>                                      | <p>LOWER BOOM. Extend arm, fingers closed, thumb pointing downward.</p>              |

|   |   |  |
|---|---|--|
|  <p><b>MOVE SLOWLY.</b> Use one hand to give any motion signal and place other hand motionless above the hand giving the motion signal. (Hoist slowly shown as example.)</p> |  <p><b>RAISE THE BOOM AND LOWER THE LOAD.</b> With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired.</p> |  <p><b>LOWER THE BOOM AND RAISE THE LOAD.</b> With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired.</p>   |
|  <p><b>SWING.</b> Extend arm, point with finger in direction of swing of boom.</p>  |  <p><b>STOP.</b> Extend arm, palm down; move arm back and forth horizontally.</p>   |  <p><b>EMERGENCY STOP.</b> Both arms extended, palms down, move arms back and forth horizontally.</p>   |
|  <p><b>TRAVEL.</b> Extend arm forward, hand open and slightly raised; make pushing motion in direction of travel.</p>  |  <p><b>DOG EVERYTHING.</b> Clasp hands in front of body.</p>   |  <p><b>TRAVEL (Both Tracks).</b> Use both fists in front of body, making a circular motion about each other, indicating direction of travel, forward or backward (for land cranes only).</p> |



DOCUMENTS INCORPORATED BY REFERENCE (16VAC25-73)

American National Standards Institute (ANSI), 11 West 42nd Street, New York, NY 10036:

ANSI/ASSE A10.32-2004, Fall Protection Systems for Construction and Demolition Operations.

ANSI Z359.1-1992 (R-1999), Personal Fall Arrest Systems, Subsystems, and Components.

ANSI Z89.1-2003, Protective Headgear for Industrial Workers.

ANSI A300, Tree Care Operations—Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices:

Part 1-2001, Pruning, revised 2008.

Part 2-1998, Fertilization, revised 2004.

Part 3-2000, Supplemental Support Systems, revised 2006.

Part 4-2002, Lightning Protection Systems.

Part 5-2005, Management of Trees and Shrubs During Site Planning, Site Development, and Construction.

Part 6-2005, Transplanting.

Part 7-2006, Integrated Vegetation Management, Electric Utility Rights-of-Way.

ANSI/SIA A92.2-2001, Vehicle-Mounted Elevating and Rotating Aerial Devices.

Virginia Work Area Protection Manual, Standards and Guidelines for Temporary Traffic Control, Virginia Department of Transportation, May 2005.

### Regulatory flexibility analysis

*Please describe the agency's analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.*

VOSH currently applies the Logging Standard, 1910.266, to arborists/tree trimming operations anytime a tree is “felled,” or cut down, however, the Logging Standard does not apply to tree trimming activities where the tree is not felled or cut down, so there is no specific regulation to address hazards associated with just trimming trees.

In instances where the Logging Standard does not apply, VOSH has had to use regulations of general application to address some hazards (e.g., 1910.95, Occupational Noise Exposure; 1910.132, Personal protective equipment; 1910.133, Eye and face protection; 1910.135, Head Protection; 1910.136, Foot protection; 1910.151, Medical services and first aid; 1910.67, Vehicle-mounted elevating and rotating work platforms; etc.), and the “general duty clause,” Va. Code §40.1-51.1(a), which provides that:

“It shall be the duty of every employer to furnish to each of his employees safe employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees....”

As is evident from the wording of the statute, it does not address in anyway the issue of hazards associated with tree trimming operations. Instead, VOSH procedures and court case law would allow the VOSH Program to issue a general duty violation and base it on a national consensus standard addressing tree trimming hazards (such as the ANSI Z133.1-2006 standard), or some other reliable industry standard the tree trimmer knew of or should have known about. While preferable to no enforcement tool at all, the general duty clause does not provide either the regulated community, employees or the VOSH Program with substantive and consistent procedures and guidance on how to reduce or eliminate tree trimming hazards. Other problems with the use of the general duty clause include the inability to use it to enforce and consensus standard provisions which use “should” or “may” language, and the inability to cite other-than-serious violations.

The arborist industry has complained at times about application of the Logging Standard to their industry because they work in residential neighborhoods and commercial areas, not in a forest; and because they often use teams of workers in directional felling of trees (with the use of ropes) and “piecing out” of trees or cutting down trees in sections (loggers usually do not operate in



teams or piece out trees). It is the opinion of the TCIA that logging and tree care are two separate professions, and while some of the equipment and methods used are similar, most equipment and methods used are quite different, and that an arborist standard would be “in the best interest of this industry.”

### Family impact

*Please assess the impact of the proposed regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.*

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This proposed regulation has no potential impact on the institution of the family or family stability.