

Training Certification Form
Tree Trimming Operations, 16 VAC 25-73

February 6, 2011

Name of Instructor: _____

Date: _____

Topics Covered:

§ 10 Scope, purpose and applicability.

[Selected provisions, not all-inclusive]:

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 nonarboricultural landscaping operations. This regulation does not apply to line-clearance tree trimming activities as defined in 16VAC25-73-20. Such activities are covered by 16VAC25-90-1910.269. 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, rights-of-way 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.

§20 Definitions.

[Selected Definitions, not all-inclusive]:

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

"Climbing system" means the various pieces of gear, or components that the arborist relies upon to secure himself 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.

"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.

"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.

"Line-clearance tree trimming" means the pruning, trimming, repairing, maintaining, removing, , 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 . 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.

"Qualified arborist" means an individual who, 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.

"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.

"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.

§40 General safety requirements.

A. General. [selected provisions, not all-inclusive]

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 16VAC25-90-1910.151, 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. First-aid training shall be provided in accordance with 16VAC25-90-1910.151.

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 16VAC25-90-1910.134.
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.

§50 Electrical Hazards.

A. General. [selected provisions, not all-inclusive]

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, that shall be conducted in accordance with 16VAC25-90-1910.269. Nonline-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. Nonline-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.

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 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.

See Table 1, Minimum Approach Distances [see regulatory text].

5. Branches hanging on an energized electrical conductor shall be removed using nonconductive equipment.
6. 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.
11. Ladders, platforms, and aerial devices, including insulated aerial devices, shall be subject to minimum approach distances in accordance with Table 1.
12. 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.
13. Emergency response to an electric contact shall be performed in accordance with 16VAC25-73-40 C.

§60 Safe use of vehicles and mobile equipment used in arboriculture.

A. General. [selected provisions, not all-inclusive]

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.
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.
11. Units with obscured rear vision, particularly those with towed equipment, shall be backed up in accordance with 16VAC25-97.

B. Aerial devices.

1.16VAC25-90-1910.67 is hereby incorporated by reference. Damaged aerial devices and vehicles shall be removed from service and tagged until repaired or discarded.
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 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).

C. Brush chippers.

1.Damaged brush chippers shall be removed from service and tagged until repaired or discarded.
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.

D. Sprayers and related equipment.

1.Damaged sprayers and related equipment shall be removed from service and tagged until repaired or discarded.
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.
7. The operator of high-pressure excavation equipment shall wear a face shield in addition to eye protection.

E. Stump cutters.

1.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.

CONTINUED: §60 Safe use of vehicles and mobile equipment used in arboriculture.

F. Vehicles. [selected provisions, not all-inclusive]

1.(See 16VAC25-60-120.) Damaged vehicles shall be removed from service and tagged until repaired or discarded.
3. Load-securing procedures shall be followed to prevent accidental shifting or discharge of logs or other materials from the vehicle during transport.

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

1.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 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).
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 16VAC25-73-130, 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: **[see text of regulation]**.

H. Specialized units.

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.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.

§70 Portable power hand tools

A. General. [selected provisions, not all-inclusive]

1.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).

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.

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.
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.
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.

D. Powered pole tools and backpack power units.

1.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.
4. Operators shall observe the position of all other workers in the vicinity while the equipment is running.
6. Powered pole tools with poles made of metal or other conductive material shall not be used in operations where electrical hazards exist.

§80 Hand tools and ladders.

A. General. [selected provisions, not all-inclusive]

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.

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

1.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.
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.

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.
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.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.

E. Ladders.

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.
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.

§90 Work procedures.

A. Ropes and arborist climbing equipment. [selected provisions, not all-inclusive]

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.
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.
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.
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.
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.

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.
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.

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.
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.

CONTINUED: §90 Work procedures.

D. Rigging. [selected provisions, not all-inclusive]

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.

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.

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.

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.

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.

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.

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.

CONTINUED: §90 Work Procedures.

CONTINUED: E. Tree removal. [selected provisions, not all-inclusive]

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.

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.

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).

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, & shutdown procedures for the chipper used.

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.

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.

G. Limbing and bucking.

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.

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.

Training Certification Form
Tree Trimming Operations, 16 VAC 25-73

February 6, 2011

§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.

Training Provided To:

- | | |
|-----------|-----------|
| 1. _____ | 11. _____ |
| 2. _____ | 12. _____ |
| 3. _____ | 13. _____ |
| 4. _____ | 14. _____ |
| 5. _____ | 15. _____ |
| 6. _____ | 16. _____ |
| 7. _____ | 17. _____ |
| 8. _____ | 18. _____ |
| 9. _____ | 19. _____ |
| 10. _____ | 20. _____ |