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DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS

DIRECTOR'S OFFICE

GENERAL INDUSTRY SAFETY STANDARDS

Filed with the Secretary of State on February 15, 1970, (as amended May 15, 1974) (as amended October 28, 1976) (as amended May 17, 1983) (as amended November 15, 1989) (as amended June 17, 1996) **(as amended August 5, 2014)**

These rules become effective immediately upon filing with the Secretary of State unless adopted under sections 33, 44, or 45a(6) of 1969 PA 306.

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(By authority conferred on the director of the department of licensing and regulatory affairs by sections 16 and 21 of 1974 PA 154, MCL 408.1016 and 408.1021, and Executive Reorganization Order Nos. 1996-2, 2003-18 2003-1, 2008-4, and 2011-4, MCL 408.1016, 408.1021, 445.2001, 445,2011, 445.2025, and 445.2030)

R 408.15112, R 408.15117, R 408.15118, R 408.15119, R 408.15122, R 408.15123, R 408.15125, R 408.15127, R 408.15131, R 408.15136, R 408.15144, R 408.15146, R 408.15149, and R 408.15167 of the Michigan Administrative Code are amended, and R 408.15102 is added, and Occupational Health Rules 3506 and 5006 are rescinded, as follows:

PART 51. LOGGING

Table of Contents:

GENERAL PROVISIONS 2
R 408.15101. Scope and application. 2
R 408.15102 Adopted and referenced standards. 2
R 408.15105. Definitions; A to C. 2
R 408.15106. Definitions; D to H. 3
R 408.15107. Definitions; L to P. 3
R 408.15108. Definitions R to Y. 4
EMPLOYER — EMPLOYEE RESPONSIBILITIES..... 4
R 408.15111. Rules, employers' duties. 4
R 408.15112. New jobs; employer's duties. 4
R 408.15113. Supervision, maintenance, and inspection by employers. 5
R 408.15114. Injuries, first aid, and first aid training. .. 5
R 408.15116. Employees; general duties. 6
R 408.15117 Employee protection in certain weather conditions; stoppage of falling operation; employee spacing and duty organization; work area safety; contact with other employees. .. 6
R 408.15118. Fire prevention. 6
R 408.15119. Training. 6
PROTECTIVE CLOTHING 7
R 408.15120. Personal protective equipment generally. Requirements. 7
R 408.15121. Clothing of workers near moving machinery. 7
R 408.15122. Protective helmets. 7
R 408.15123. Eye and face protection. 7
R 408.15124. Gloves. 7
R 408.15125. Foot and leg protection. 7
PROTECTIVE EQUIPMENT HAND-HELD CHAIN SAWS 8
R 408.15127. Explosives and blasting agents generally. 8
R 408.15130. Hand and portable powered tools generally. 8
R 408.15131. Chain saws generally. 8
R 408.15136. Hand-held chain saw operations. 8
OTHER SAWS 9
R 408.15137. Slasher saws; guards. 9
R 408.15138. Buzz saws; guards. 9
LOGGING EQUIPMENT 9
R 408.15141. Flying particles. 9
R 408.15142. Operator stands. 9
R 408.15143. Controls. 9
R 408.15144. Rollover protection and cab guards. 9
R 408.15146. Equipment, maintenance of mufflers; seating and seatbelts; design and construction of skidding and hauling equipment; towing; prehaulers and forwarders; crane or clam turning; trucks; operation of loading devices; alteration of logging equipment; insulation or shielding or surfaces of logging equipment. 10
R 408.15148. Logging equipment; operations. 11
R 408.15149. Machines generally. 12
R 408.15150. Vehicles. 12

FELLING, LIMBING, BUCKING, AND SKIDDING ... 12
R 408.15151. Felling. ... 12
R 408.15152. Working alone. ... 13
R 408.15153. Lodged tree removal. ... 13
R 408.15154. Dangerous trees and snags. ... 13
R 408.15155. Springpoles; and other trees under stress. ... 13
R 408.15156. Notch or undercut; back cut; hinge wood. ... 13
R 408.15158. Skidding; yarding. ... 13
R 408.15165. Water. ... 14
R 408.15166. Storage. ... 14
R 408.15167. Chipping. ... 14
TRUCK EQUIPMENT AND OPERATION ... 14
R 408.15172. Side, end and trip stakes. ... 14
R 408.15175. Transport vehicles. ... 14
R 408.15180. Firewood and log-splitting operations. . 15
R 408.15181. Power takeoff. ... 15

APPENDIX ... 15

GENERAL PROVISIONS

R 408.15101. Scope and application.
Rule 5101. (1) These rules establish safety practices, means, methods, and operations for all types of logging, regardless of the end use of the wood, including pulpwood and timber harvesting and the logging of sawlogs, veneer bolts, poles, pilings, and other forest products. These rules do not apply to the construction or use of cable yarding systems.

(2) These rules apply to all logging operations as defined by R 408.15107(7).

R 408.15102 Adopted and referenced standards.
Rule 5102. (1) The following standards are adopted by reference in these rules and are available from IHS Global, 15 Inverness Way East, Englewood, Colorado, 80112, USA, telephone number: 1-800-854-7179 or via the internet at website: http://global.ihs.com; at a cost as of the time of adoption of these rules, as stated in this subrule.

(a) American National Standard Institute (ANSI) Standard, ANSI B175.1 “Gasoline-Powered Chain Saws Safety Requirements,” 1991 edition. Cost: $57.00.

(b) American Society of Mechanical Engineers (ASME) Standard, ASME B56.6 “Safety Standard for Rough Terrain Forklift Trucks,” 1992 edition with addenda. Cost: $120.00.

(c) Society of Automotive Engineers (SAE) Standard, SAE J185 “Access Systems for Off-Road Machines,” June 1988 edition. Cost: $98.00.

(d) SAE J231 “Minimum Performance Criteria for Falling Object Protective Structures (FOPS),” January 1981 edition. Cost: $98.00.

(e) SAE J386 “Operator Restraint Systems for Off-Road Work Machines,” June 1985 edition. Cost: $98.00.

(f) SAE J397 “Deflection Limiting Volume-Protective Structures Laboratory Evaluation,” April 1988 edition. Cost: $98.00.

(g) SAE J1040 “Performance Criteria for Rollover Protective Structures (ROPS) for Construction, Earthmoving, Forestry, and Mining Machines,” April 1988 edition. Cost: $98.00.

(2) The standards adopted in subrule (1) of this rule are also available for inspection at the Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143.

(3) Copies of the standards adopted in subrule (1) of this rule may be obtained from the publisher or may also be obtained from the Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, 7150 Harris Drive, P.O. Box 30643, Lansing, Michigan, 48909-8143, at the cost charged in this rule, plus $20.00 for shipping and handling.

(4) The following Michigan occupational safety and health standards are referenced in these rules. Up to 5 copies of these standards may be obtained at no charge from the Michigan Department of licensing and regulatory affairs, MIOSHA standards section, 7150 Harris Drive, P.O. Box 30643, Lansing, MI, 48909-8143 or via the internet at website: www.michigan.gov/mioshastandards. For quantities greater than 5, the cost, at the time of adoption of these rules, is 4 cents per page.

(a) General Industry Safety Standard Part 7 “Guards for Power Transmission,” R 408.10701 to R 408.10765.

(b) General Industry Safety Standard Part 8 “Portable Fire Extinguishers,” R 408.10801 to R 408.10839.

(c) General Industry Safety Standard Part 21 “Powered Industrial Trucks,” R 408.12101 to R 408.12193.

(d) General Industry Safety Standard Part 33 “Personal Protective Equipment,” R 408.13301 to R 408.13398.

(e) General Industry Safety Standard Part 52 “Sawmills,” R 408.15201 to R 408.15277.

(f) General Industry Safety Standard Part 55 “Explosives and Blasting Agents,” R 408.15501.

(g) General Industry Safety Standard Part 58 “Aerial Work Platforms,” R 408.15801 to R 408.15842.

R 408.15105. Definitions; A to C.
Rule 5105. (1) “Approved” means, unless otherwise indicated, approval or listing by either underwriters laboratories, incorporated, or factory mutual engineering corporation.

(2) “Approved container” means an approved metal or nonmetallic container which does not have more than a 6- gallon capacity, which has a spring-closing lid and spout cover, and which is designed so that it will safely relieve internal pressure when exposed to fire.

(3) “Arch” means an open-framed trailer or built-up framework that is used to suspend the leading ends of trees or logs when they are skidded.

(4) “Auger log splitter” means a machine which is for splitting logs and which uses a rotating, cone-shaped screw to provide a splitting force to the log.

(5) “Back cut” means the final cut made in felling a tree. It is made on the side away from the direction of fall.

(6) “Ballistic nylon” means a nylon fabric which has high tensile properties and which is designed to provide protection from lacerations.

(7) “Binder” means a wrapper which is a chain or wire rope and which is used to bind a load of logs or pulpwood.

(8) “Buck” or “bucking” means the act of cutting a felled tree into shorter lengths.

(9) “Bucker” means a person who cuts felled trees into shorter lengths.

(10) “Cable yarding” means the movement of felled trees or logs from the area where they are felled to the landing on a system composed of a cable suspended from spars or towers, or both. The trees or logs may be either dragged across the ground on the cable or carried while suspended from the cable.

(11) “Chain saw” means a saw which is powered by a gasoline engine, an electric motor, or other means and which has its cutting elements on an endless chain. A chain saw, for the purpose of this part, is hand-held during use.

(12) “Chipper” means a mechanical device that reduces logs to small flakes or chips.

(13) “Chock” means a block, often wedge shaped, that is used to prevent movement, such as preventing a log from rolling or a wheel from turning.

(14) “Choker” means a sling that is used to encircle the end of a log for yarding. One end of the choker is passed around the load and through a loop eye, end fitting or other device at the other end of the sling. The end of the choker that passed through the end fitting or other device is then hooked to the lifting or pulling machine.

R 408.15106. Definitions; D to H.

Rule 5106. (1) “Danger tree” means a standing tree that presents a hazard to an employee due to conditions such as deterioration or physical damage to the root system, trunk, stem, or limbs, and the direction and lean of the tree.

(2) “Debarker” means a machine that removes bark from logs.

(3) “Decking” means the act of piling logs or pulpwood on a skidway for temporary storage.

(4) “Disabling injury” or “lost time injury” means an injury which prevents a person from reporting for the next scheduled work shift or which causes a permanent partial impairment.

(5) “Designated person” means an employee who has the requisite knowledge, training, and experience to perform specific duties.

(6) “Domino felling” means the partial cutting of multiple trees which are left standing and which are then pushed over with a pusher tree.

(7) “Eye protection” means a device worn in front of the eyes, the predominant function of which is to protect the eyes from hazards.

(8) “Fell” or “fall” means to cut down trees.

(9) “Feller” or “faller” means a person who cuts a tree from its stump.

(10) “Felling” or “falling” means the act of cutting a tree from its stump.

(11) “Flammable liquid” means any liquid which has a flash point below 100 degrees Fahrenheit and which has a vapor pressure of not more than 40 pounds per square inch (absolute) at 100 degrees Fahrenheit.

(12) “Grapple” means a hinged clamping device which is at the working end of a line or boom, and which is used to grasp and release forest products during skidding, yarding, or loading.

(13) “Grounded” means the placement of a component of a machine on the ground or on a device where it is firmly supported.

(14) “Guarded” means that an object is covered, fenced, or surrounded so that it is not exposed to contact.

(15) “Guy line” means a line which is used to stay or support spar trees or booms or which is used for equipment that needs support.

(16) “Health care provider” means a health care practitioner operating within the scope of his or her license, certificate, registration, or legally authorized practice.

(17) “Hinge wood” means the portion of a tree which is left uncut which controls the direction of the fall. See figure 1 of R 408.15156.

(18) “Hydraulic ram log splitter” means a machine for splitting logs that uses pressurized fluid to cause a wedge to pass through a log.

R 408.15107. Definitions; L to P.

Rule 5107. (1) “Limb” or “limbing” means the act of cutting the limbs from felled or standing trees.

(2) “Limber” means a person or machine that limbs.

(3) “Loader” means a mechanical device that loads logs.

(4) “Lodged tree” means a tree that is prevented by another tree from falling to the ground.

(5) “Log” means a segment sawed or split from a felled tree, such as a section, bolt, or tree length.

(6) “Logging equipment” means a mechanically powered device used in a logging operation.

(7) “Logging operations” means the operations that are associated with felling and moving trees and logs from the stump to the point of delivery, such as any of the following:

(a) Marking.
(b) Felling.
(c) Bucking.
(d) Limbing.
(e) Debarking.
(f) Chipping.
(g) Yarding.
(h) Loading.

(i) Unloading.
(j) Storing.

The term includes the transporting of machines, equipment, and personnel from one logging site to another.

(8) “Machine” means a piece of stationary or mobile equipment which is a self-contained powerplant, which is operated off the road and which is used for the movement of material. “Machine” includes any of the following:

(a) A tractor.
(b) A skidder.
(c) A front-end loader.
(d) A scraper.
(e) A grader.
(f) A bulldozer.
(g) A swing yarder.
(h) A log stacker.
(i) A mechanical felling device, such as tree shears or a feller-buncher. “Machine” does not include an airplane or aircraft such as helicopters.

(9) “Mechanical felling device” or “feller buncher” means equipment used to harvest trees.

(10) “Mechanical ram log splitter” means a machine for splitting logs that uses a mechanical means to cause a wedge to pass through a log.

(11) “Mobile equipment” means that equipment, except for an over-the-road vehicle, that is required to be mobile to perform a part of its work function.

(12) “Notch” or “undercut” means a notch made in a standing tree at the beginning of the felling operation that guides the direction of the fall of the tree.

(13) “Prehauling” or “forwarding” means the hauling of forest products before highway or rail movement, by off-the- road vehicles, by nonhighway transport, or by any other means where the forest products travel clear of the ground.

(14) “Protective helmet,” “hard hat,” or “safety hat” means a rigid device which is designed to protect the head from flying and falling objects or electrical shock, or both, and which is held on the head by a suitable mans of suspension.

R 408.15108. Definitions R to Y.

Rule 5108. (1) “Rated capacity” means the maximum load that a system, vehicle, machine, or piece of equipment was designed by the manufacturer to handle.

(2) “Root wad” means the ball of a tree root and dirt that is pulled from the ground when a tree is uprooted.

(3) “Servicable condition” means a state or ability of a tool, machine, vehicle, or other device to operate as it was intended by the manufacturer to operate.

(4) “Skid” or “skidding” means the act of dragging logs on the ground.

(5) “Skidder” means a person or machine that skids logs.

(6) “Slasher saw” means a mechanical saw used for bucking.

(7) “Slope” means the increase or decrease in altitude over a horizontal distance expressed as a percentage. For example, a change of altitude of 20 feet (6 m) over a horizontal distance of 100 feet (30 m) is expressed as a 20% slope.

(8) “Snag” means a standing dead tree.

(9) “Spring pole” means a tree, sapling, or limb which is bent under tension and which springs out after the tension is released.

(10) “Tie down” means a chain, cable, steel strips, or fiber webbing and binders attached to a truck, trailer, or other conveyance as a means of securing loads and preventing them from shifting or moving when being transported.

(11) “Tractor” means a powered vehicle which is for off-the-road hauling or towing and which is equipped with crawler tracks or wheels.

(12) “Tree harvester” means a mechanized, self-propelled machine that is designed to perform 1 or several logging functions, such as felling, limbing, bucking, chipping, skidding or loading.

(13) “Undercut” means a notch cut in a tree to guide the direction of the tree fall and to prevent splitting or kickback.

(14) ”Vehicle” means a car, bus, truck, trailer, or semitrailer which is owned, leased, or rented by an employer and which is used to transport employees or move material.

(15) “Winching” means the winding of cable or rope onto a spool or drum.

(16) ”Yarding” means the movement of logs from the place they are felled to a landing.

EMPLOYER — EMPLOYEE RESPONSIBILITIES

R 408.15111. Rules, employers’ duties.

Rule 5111. An employer shall review these rules with each new employee.

R 408.15112. New jobs; employer’s duties.

Rule 5112. Before an employee starts work on a new job, an employer shall do all of the following:

(a) Familiarize the employee with the type of work to be performed in the job.

(b) Instruct the employee in the safeguards and hazards of the assigned job.

(c) Instruct the employee in the operation, adjustment, maintenance, and safe practices of equipment.

(d) Issue an operator’s permit card of the type prescribed in General Industry Safety Standard Part 21 “Powered Industrial Trucks,” as referenced in R 408.15102, if off-road mobile equipment is to be operated.

R 408.15113. Supervision, maintenance, and inspection by employers.

Rule 5113. An employer shall do all of the following:

(a) Provide supervision necessary to enforce compliance with these rules.

(b) Maintain buildings, equipment, and workplaces in a safe and orderly condition.

(c) Conduct inspections as necessary to ensure compliance with these rules.

(d) Not permit an employee to work alone on felling or skidding operations.

(e) Not permit an employee to work in an area with equipment which is in a dangerous condition.

(f) Account for the presence of each employee at the end of each workday.

(g) Ensure that all safeguards are installed and functional before allowing equipment to be used.

(h) Only permit a designated and trained employee to operate logging equipment.

R 408.15114. Injuries, first aid, and first aid training.

Rule 5114. (1) An employer shall provide first aid kits at each worksite where trees are being cut, at each active landing, and on each employee transport vehicle. The number of first aid kits and the content of each kit shall reflect the degree of isolation, the number of employees, and the hazards reasonably anticipated at the worksite.

(2) The number and content of first aid kits may be reviewed and approved annually by a health care provider.

(3) An employer shall maintain the contents of each first aid kit in a serviceable condition.

(4) An employer shall have not less than 1 employee at a jobsite who is trained in Red Cross first aid or who has equivalent training.

(5) An employer shall assure that each employee, including supervisors, receives or has received first aid and cardiopulmonary resuscitation (CPR) training that is in compliance with the requirements specified in subrule (11) of this rule.

(6) An employer shall assure that each employee receives first aid training at least once every 3 years and receives CPR training at least annually.

(7) An employer shall assure that each employee's first aid and CPR training or certificate of training, or both, remain current.

(8) All training shall be conducted by a designated person.

(9) An employer shall assure that all training required by this rule is presented in a manner that the employee is able to understand. An employer shall assure that all training materials used are appropriate in content and vocabulary to the educational level, literacy, and language skills of the employees being trained.

(10) The contents of the first aid kit shall be adequate for small worksites, that consist of approximately 2 or 3 employees. When larger operations or multiple operations are being conducted at the same location, additional first aid kits shall be provided at the worksite or additional quantities of supplies shall be included in the first aid kits. A first aid kit on a logging worksite shall contain at least all of the following items:

(a) Gauze pads that are not less than 4 inches by 4 inches.

(b) Two large gauze pads that are not less than 8 inches by 10 inches.

(c) Box adhesive bandages (band-aids).

(d) One package gauze roller bandage that is not less than 2 inches wide.

(e) Two triangular bandages.

(f) A wound cleaning agent, such as sealed, moistened towelettes.

(g) Scissors.

(h) At least 1 blanket.

(i) Tweezers.

(j) Adhesive tape.

(k) Latex gloves.

(l) Resuscitation equipment, such as a resuscitation bag, airway, or pocket mask.

(m) Two elastic wraps.

(n) Splint.

(o) Directions for requesting emergency assistance.

(11) At a minimum, for employees engaged in logging activities, first aid and CPR training shall be conducted using conventional methods of training, such as lecture, demonstration, practical exercise, and examination, both written and practical. In addition, the length of training shall be sufficient to assure that trainees understand the concepts of first aid and can demonstrate their ability to perform the various procedures required in subrule (12) of this rule.

(12) At a minimum, first aid and CPR training shall consist of instruction in all of the following areas:

(a) The definition of first aid.

(b) The legal issues of applying first aid (Good Samaritan laws).

(c) Basic anatomy.

(d) Patient assessment and first aid for all of the following:

(i) Respiratory arrest.

(ii) Cardiac arrest.

(iii) Hemorrhage.

(iv) Lacerations and abrasions.

(v) Amputations.

(vi) Musculoskeletal injuries.

(vii) Shock.

(viii) Eye injuries.

(ix) Burns.

(x) Loss of consciousness.

(xi) Extreme temperature exposure (hypothermia/ hyperthermia).

(xii) Paralysis.

(xiii) Poisoning.

(xiv) Loss of mental functioning, such as psychosis and hallucinations.

(e) CPR.

(f) The application of dressings and slings.

(g) The treatment of strains, sprains, and fractures.

(h) The immobilization of injured persons.

(i) The handling and transporting of injured persons.

(j) The treatment of bites or stings or for contact with poisonous plants or animals.

R 408.15116. Employees; general duties.

Rule 5116. An employee shall do all of the following:

(a) Abide by the safety procedures pertaining to the job as prescribed by the employer and comply with these rules.

(b) Examine the work area and equipment that is going to be used before work begins and report a dangerous or unsafe condition in the work area or equipment to the immediate supervisor.

(c) Refrain from a reckless practice or action which could result in an accident or injury.

(d) Not operate a machine without experience, instruction, and authorization.

R 408.15117 Employee protection in certain weather conditions; stoppage of falling operation; employee spacing and duty organization; work area safety; contact with other employees.

Rule 5117. (1) All work shall stop and employees shall be moved to a place of safety when environmental conditions, such as, but not limited to, electrical storms, strong winds which may affect the fall of a tree, heavy rain or snow, extreme cold, dense fog, fires, mudslides, or darkness, or other hazardous weather conditions that would be dangerous to the employees occur.

(2) A falling operation shall stop if a wind prevents a tree from falling in the desired direction or if the faller's vision is impaired by a weather condition or darkness.

(3) Employees shall be spaced, and the duties of each employee shall be organized, so that the actions of one employee will not create a hazard for any other employee.

(4) Work area shall be assigned so that trees cannot fall into an adjacent occupied work area. The distance between adjacent occupied work areas shall be not less than 2 tree lengths of the trees being felled. The distance between adjacent occupied work areas shall reflect the degree of slope, the density of the growth, the height of the trees, the soil structure, and other hazards reasonably anticipated at the worksite. A distance of more than 2 tree lengths shall be maintained between adjacent occupied work areas on any slope where the rolling or sliding of trees or logs is reasonably foreseeable.

(5) Each employee shall work in a position or location that is within visual or audible contact of another employee.

(6) Hand signals or audible contact, such as, but not limited to, whistles, horns, or radios, shall be utilized whenever noise, distance, restricted visibility, or other factors prevent clear understanding of normal voice communications between employees.

R 408.15118. Fire prevention.

Rule 5118. (1) Smoking or an open flame is prohibited within 10 feet of an engine being refueled.

(2) Refueling shall not be done in an area where conditions are conducive to fire.

(3) An approved fire extinguisher, as prescribed in the General Industry Safety Standard Part 8 "Portable Fire Extinguishers," as referenced in R 408.15102, shall be provided and maintained on each machine and on each vehicle.

(4) Gasoline or other flammable liquid shall be stored in an approved container that is located not less than 25 feet from a source of ignition.

(5) Machinery shall be kept free of accumulations of flammable material.

(6) Flammable liquids shall not be transported on a personnel carrier unless a storage box is provided. Flammable and combustible liquids shall not be transported in the driver compartment or any passenger-occupied area of a machine or vehicle.

(7) Flammable liquids shall not be used to start a fire or as a cleaning solvent.

(8) The engine of a powered machine shall be shut off while being refueled and serviced.

R 408.15119. Training.

Rule 5119. (1) An employer shall provide training for each employee, including supervisors, at no cost to the employee.

(2) The training shall be provided as follows:

(a) As soon as possible after July 2, 1996, initial training for each current and new employee.

(b) Before initial assignment for each new employee.

(c) When an employee is assigned new work tasks, tools, equipment, machines, or vehicles.

(d) When an employee demonstrates unsafe job performance.

(3) At a minimum, training shall consist of all of the following elements:

(a) The safe performance of assigned work tasks.

(b) The safe use, operation, and maintenance of tools, machines, and vehicles that the employee uses or operates, including an emphasis on understanding and following the manufacturer's operating and maintenance instructions, warnings, and precautions.

(c) The recognition of safety and health hazards associated with the employee's specific work tasks, including the use of measures and work practices to prevent or control the hazards.

(d) The recognition, prevention, and control of other safety and health hazards in the logging industry.

(e) The procedures, practices, and requirements of the employer's worksite.

(f) The requirements of these rules.

(4) The training of an employee due to unsafe job performance or before the assignment of new work tasks, tools, equipment, machines, or vehicles may be limited to the elements in subrule (3) of this rule that are relevant to the circumstances giving rise to the need for training.

(5) Each current employee who has received training in the particular elements specified in subrule (3) of this rule shall not be required to be retrained in those elements.

(6) Each new employee who has received training in the particular elements specified in subrule (3) of this rule shall not be required to be retrained in those elements before initial assignment.

(7) An employer shall train each current and new employee in the elements for which the employee has not received training.

(8) Each new employee and each employee who is required to be trained shall work under the close supervision of a designated person until the employee demonstrates to the employer the ability to safely perform his or her new duties independently.

(9) An employer shall verify training by preparing a written certification record that contains all of the following information:

(a) The name or other identity of the employee trained.

(b) The date or dates of the training.

(c) The signature of the person who conducted the training or the signature of the employer.

If an employer relies on training conducted before the employee's hiring or completed before the effective date of this rule, then the certification record shall indicate the date on which the employer determined the previous training was adequate.

(10) The employer shall maintain the most recent training certification for an employee.

(11) An employer shall hold safety and health meetings as necessary, but at least once each month for each employee. Safety and health meetings may be conducted individually, in crew meetings, in larger groups, or as part of other staff meetings.

PROTECTIVE CLOTHING

R 408.15120. Personal protective equipment generally. Requirements.

Rule 5120. (1) An employer shall assure that personal protective equipment, including any personal protective equipment provided by an employee, is maintained in a serviceable condition.

(2) An employer shall assure that personal protective equipment, including any personal protective equipment provided by an employee, is inspected before initial use during each work shift. Defects or damage shall be repaired or the unserviceable personal protective equipment shall be replaced before work is commenced.

R 408.15121. Clothing of workers near moving machinery.

Rule 5121. A person working near moving machinery shall wear close fitting, fastened clothing.

R 408.15122. Protective helmets.

Rule 5122. An employer shall provide, at no cost to the employee, and assure that each employee wears, a protective helmet on the jobsite as prescribed in General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.15102.

R 408.15123. Eye and face protection.

Rule 5123. (1) An employer shall provide, at no cost to the employee, and assure that each employee wears, eye protection as prescribed in General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.15102.

(2) A steel wire or nylon mesh screen that is strong enough to protect the face to below the nose from chips or sawdust from a chain saw or where there is potential for facial injury shall be provided by the employer and worn by the employee. Face protection shall be in compliance with the requirements of General Industry Safety Standard Part 33 "Personal Protective Equipment," as referenced in R 408.15102.

R 408.15124. Gloves.

Rule 5124. (1) An employee on a logging operation who is working with a wire rope or sharp object that may cause an injury to the hand shall wear gloves of a suitable type. The gloves shall be provided by the employer at no expense to the employee and shall provide adequate protection from puncture wounds, cuts, and lacerations.

(2) Gloves that can be caught and pulled into a pinch point or rotating equipment shall not be worn.

R 408.15125. Foot and leg protection.

Rule 5125. (1) An employer shall assure that each employee wears foot protection, such as heavy-duty logging boots which are waterproof or water-repellent and which cover and provide support to the ankle. The employer shall assure that each employee who operates a chain saw wears foot protection that is constructed with cut-resistant material that will protect the employee's foot against contact with a running chain saw. The employer shall assure that each employee wears sharp, calk-soled boots or other slip-resistant type boots where the employer demonstrates that they are necessary for the employee's job, the terrain, the timber type, and the weather conditions, provided that foot protection otherwise required by this rule is met.

(2) The employer shall provide, at no cost to the employee, and assure that each employee who operates a chain saw wears leg protection made of cut-resistant material, such as ballistic nylon. The leg protection shall cover the full length of the thigh to the top of the boot on each leg to protect against contact with a moving chain saw.

Exception: This requirement does not apply when an employee is working as a climber if the employer demonstrates that a greater hazard is posed by wearing leg protection in the particular situation, or when an employee is working from a vehicular mounted elevating and rotating work platform meeting the requirements of General Industry Safety Standard Part 58 "Aerial Work Platforms," as referenced in R 408.15102.

PROTECTIVE EQUIPMENT
HAND-HELD CHAIN SAWS

R 408.15127. Explosives and blasting agents generally.

Rule 5127. (1) Explosives and blasting agents shall be stored, handled, transported, and used in accordance with the requirements of General Industry Safety Standard Part 55 "Explosives and Blasting Agents," as referenced in R 408.15102.

(2) Only a designated person shall handle or use explosives and blasting agents.

(3) Explosives and blasting agents shall not be transported in the driver compartment or in any passenger-occupied area of a machine or vehicle

R 408.15130. Hand and portable powered tools generally.

Rule 5130. (1) An employer shall assure that each hand and portable powered tool, including any tool provided by an employee, is maintained in servicable condition.

(2) An employer shall assure that each tool, including any tool provided by an employee, is inspected before initial use during each work shift. At a minimum, all of the following items shall be inspected:

(a) Handles and guards, to assure that they are sound, tight-fitting, properly shaped, free of splinters and sharp edges, and in place.

(b) Controls, to assure proper function.

(c) Chain saw chains, to assure proper adjustment.

(d) Chain saw mufflers, to assure that they are operational and in place.

(e) Chain brakes and nose-shielding devices, to assure that they are in place and function properly.

(f) Heads of shock, impact-driven, and driving tools, to assure that there is no mushrooming.

(g) Cutting edges, to assure that they are sharp and properly shaped.

(h) All other safety devices, to assure that they are in place and function properly.

(3) An employer shall assure that each tool is used only for the purpose for which it has been designed.

(4) When the head of any shock, impact-driven, or driving tool begins to chip, it shall be repaired or removed from service.

(5) The cutting edge of each tool shall be sharpened in accordance with the manufacturer's specifications when it becomes dull during the work shift.

(6) A hand tool transported in the same compartment of a vehicle with an employee shall be secured to the vehicle in a rack, box, holster, or other means.

(7) When a hand tool is not being used, it shall be stored in a storage facility at a designated location.

(8) Defective hand tools that could cause injury shall be repaired or replaced.

R 408.15131. Chain saws generally.

Rule 5131. (1) A hand-held chain saw shall be equipped with a positive-type, on-off ignition switch which is conveniently located on the saw so that the operator can move the switch into the off position without relinquishing a secure grip on the saw.

(2) A manual chain oiler control, if provided on a handheld chain saw, shall be located so that it can be operated without relinquishing a secure grip on the saw.

(3) A hand-held chain saw shall have a guard that protects the throttle lever from casual contact and from brush or other foreign objects.

(4) Each gasoline-powered chain saw shall be equipped with a continuous pressure throttle control system that will stop the chain when pressure on the throttle is released.

(5) A hand-held chain saw's moving parts, such as a flywheel, rotating screen, or clutch, shall be guarded.

(6) Each chain saw placed into initial service after July 2, 1996, shall be equipped with a chain brake and shall be in compliance with the requirements of ANSI B175.1 "Safety Requirements for Gasoline-Powered Chain Saws," 1991 edition, which is adopted by reference in R 408.15102.

R 408.15136. Hand-held chain saw operations.

Rule 5136. (1) A chain saw operator shall shut off a hand-held saw motor when carrying it for a distance of more than 50 feet (15.2m) or in a hazardous situation. A hand-held chain saw shall be carried so as to prevent an employee from coming in contact with the saw chain or muffler.

(2) A chain saw operator shall shut down a chain saw or engage the chain brake when carrying a saw less than 50 feet if conditions, such as the terrain, underbrush, and slippery surfaces, create a hazard for an employee.

(3) An approved container shall be used for refueling a hand-held chain saw. A hand-held chain saw shall not be started within 10 feet (3m) of a refueling area.

(4) A chain saw shall be fueled not less than 10 feet (3m) from any open flame or other source of ignition.

(5) A chain saw operator shall hold a hand-held chain saw with both hands during its use, with thumbs firmly locked around the handles.

(6) Before starting a cut, a chain saw operator shall clear away brush and other items that would interfere with the cutting operation or the retreat path.

(7) A chain saw operator shall be certain of his or her footing before starting to cut. A chain saw shall not be used in a position or at a distance that could cause the operator to become off-balance, to have insecure footing, or to relinquish a firm grip on the saw.

(8) A chain saw operator shall not use a hand-held chain saw to cut directly overhead or in a position which could cause him or her to relinquish a secure grip on the saw.

(9) A hand-held chain saw which is purchased after July 2, 1996, and which is used by an employee to perform logging operations shall be equipped with both of the following:

(a) A chain brake and a chain designed to reduce kickback.

(b) A safety bar and a chain designed to reduce kickback.

(10) A chain saw shall be operated and adjusted in accordance with the manufacturer's instruction.

(11) A chain saw shall be started on the ground or where otherwise firmly supported. A chain saw shall not be drop started.

(12) A chain saw shall be shut off or the throttle released before a feller starts to retreat.

OTHER SAWS

R 408.15137. Slasher saws; guards.

Rule 5137. (1) A slasher saw blade shall be guarded by a fixed or adjustable barrier guard which protects the operator or other employees from inadvertently coming into contact with the saw teeth from the back side.

(2) The fixed or adjustable barrier guard shall be constructed to keep an employee from coming into contact with the saw blade and shall be capable of retaining any blocks which are cut off and which may be thrown by the blade.

R 408.15138. Buzz saws; guards.

Rule 5138. (1) A buzz saw shall have a hood-type guard which covers the upper half of the blade, arbor, and nut at all times. The lower part of the blade shall be guarded by 1 of the following:

(a) A fixed or adjustable barrier guard which protects the operator from inadvertently coming into contact with the saw teeth.

(b) A self-adjusting guard which will prevent employee exposure to the front of the saw blade by dropping onto the workpiece before the blade starts the cut and remaining in contact with the workpiece until the saw table returns to the forward position.

(c) Movement of the saw table into the saw by use of constant pressure controls located so that the operator cannot come into contact with the saw blade.

(d) Any other type of guarding that provides equal protection.

(2) A limit chain or other equally effective device shall be provided to prevent the buzz saw blade from extending past the front of the saw table.

LOGGING EQUIPMENT

R 408.15141. Flying particles.

Rule 5141. The working parts of a machine shall be guarded to prevent flying particles from injuring the operator or any other person in the immediate area.

R 408.15142. Operator stands.

Rule 5142. A machine operator stand or station shall have a slip-resistant walking and working surface, which shall be kept clean of slippery substances and clear of obstructions, waste, debris, and any other material that might result in fire, slipping, or falling. A stand shall have a means of access, such as steps, a ladder, or footholds and handholds. If the stand is totally enclosed, it shall be ventilated.

R 408.15143. Controls.

Rule 5143. (1) A machine control shall be located within easy reach of the operator.

(2) Each control shall be identified as to its function by a durable label which is visible to the operator when in the operator zone.

R 408.15144. Rollover protection and cab guards.

Rule 5144. (1) Each tractor, skidder, swing yarder, log stacker, and mechanical felling device, such as a tree shears or feller-buncher, that is placed into initial service after February 9, 1995, shall be equipped with falling object protective structure (FOPS) or rollover protective structure (ROPS), or both. The employer shall replace FOPS or ROPS that have been removed from any machine.

Exception: This requirement does not apply to machines that are capable of 360 degree rotation.

(2) For each machine manufactured after August 1, 1996, the FOPS shall be installed, tested, and maintained in accordance with SAE J231, "Minimum Performance Criteria for Falling Object Protective Structures (FOPS)," January 1981 edition, which is adopted by reference in R 408.15102.

(3) For each machine manufactured after August 1, 1996, the ROPS shall be installed, tested, and maintained in accordance with SAE J1040, "Performance Criteria for Rollover Protective Structures (ROPS) for Construction, Earthmoving, Forestry, and Mining Machines," April 1988 edition, which is adopted by reference in R 408.15102.

(4) For each machine manufactured after August 1, 1996, the ROPS and FOPS shall be in compliance with the requirements of SAE J397, "Deflection Limiting Volume- ROPS/FOPS Laboratory Evaluation," April 1988 edition, which is adopted by reference in R 408.15102.

(5) A protective structure shall not impede the operator's normal movements.

(6) In addition to the rollover protection, the upper portion of the cab of mobile equipment shall have both of the following:

(a) A screen brush guard on all 4 sides, except for doorways. The front, rear, and side brush screen shall be 1/4-inch wire, or equivalent, and have not more than a 2-inch mesh.

(b) An overhead canopy guard or solid material that extends the full width and length of the canopy.

(7) The lower portion of a cab of mobile equipment shall be enclosed with solid material, except at an entrance, to prevent objects from entering the cab. The entrance shall be not less than 52 (1.3m) inches in vertical height from the floor of the cab.

(8) An enclosure of the upper portion of each cab shall allow maximum visibility. Where glass is used on a cab, it shall be safety glass or an equivalent.

An additional metal screen shall be used where there is exposure to falling or flying objects. Provision shall be made to clean glass to assure adequate visibility.

(9) Transparent material that may create a hazard for the operator, such as cracked, broken, or scratched safety glass, shall be replaced.

(10) A deflector shall be installed in front of each cab to deflect whipping saplings and branches. A deflector shall be located so as not to impede visibility and access to the cab.

(11) Each machine operated near cable yarding operations shall be equipped with sheds or roofs that are strong enough to provide protection from breaking lines.

(12) Each forklift shall be equipped with an overhead guard that is in compliance with the requirements of ASME B56.6 “Safety Standard for Rough Terrain Forklift Trucks,” 1992 edition with addenda, which is adopted by reference in R 408.15102.

(13) Machine access systems that are in compliance with the specifications of SAE J185, “Recommended Practice for Access Systems for Off-Road Machines,” June 1988 edition, as adopted in R 408.15102, shall be provided for each machine where the operator or any other employee must climb onto the machine to enter the cab or to perform maintenance.

(14) Each machine cab shall have a second means of egress.

(15) ROPS shall be tested, installed, and maintained in serviceable condition.

R 408.15146. Equipment, maintenance of mufflers; seating and seatbelts; design and construction of skidding and hauling equipment; towing; prehaulers and forwarders; crane or clam turning; trucks; operation of loading devices; alteration of logging equipment; insulation or shielding or surfaces of logging equipment.

Rule 5146. (1) Equipment originally equipped with a muffler shall have the muffler maintained when the equipment is in operation.

The exhaust pipes on each machine shall be located so exhaust gases are directed away from the operator and mounted or guarded to protect each employee from accidental contact.

An exhaust pipe shall be equipped with a spark arrester. An engine equipped with turbochargers does not require a spark arrester.

(2) Equipment shall be operated only from the position or seat intended for that purpose. A seat belt shall be provided on mobile equipment, including any vehicle or machine provided by an employee. An employer shall assure all of the following:

(a) That a seat belt is provided for each vehicle or machine operator.

(b) That each employee uses the available seat belt while the vehicle or machine is being operated.

(c) That each employee securely and tightly fastens the seat belt to restrain the employee within the vehicle or machine cab.

(d) That each machine seat belt is in compliance with the requirements of SAE J386, “Operator Restraint Systems for Off-Road Work Machines,” June 1985 edition, as adopted in R 408.15102, which was equipped with seat belts at the time of manufacture.

(e) That seat belts are not removed from any vehicle or machine. The employer shall replace each seat belt that has been removed from any vehicle or machine that was equipped with seat belts at the time of manufacture.

(f) That each seat belt is maintained in a serviceable condition.

(3) Skidding and prehauling equipment shall be designed and constructed to allow a minimum radius vehicle turn without the load contacting the rear wheel or the rear track assembly.

(4) Towed equipment shall be attached in a manner that will allow a full 90-degree turn, prevent overrunning, and assure control of the towed equipment.

(5) A prehauler or forwarder shall have a means of retaining loads and a means for securing the load during transport.

(6) A crane or clam that has a turning house shall have not less than 2 feet of clearance between the turning radius of the house and a fixed object.

(7) A truck shall have a guard that protects the operator in the cab from a load shift.

(8) A truck shall be driven by a licensed driver and have, in its cab, flares and flags and an approved multipurpose fire extinguisher that has a rating of not less than 2a-4bc.

(9) A loading device shall not be operated so that the load passes over the operator or employees.

(10) Logging equipment shall not be altered to exceed the rated capacity, unless the alterations are approved by the manufacturer.

(11) All hot surfaces on logging equipment that have a temperature of more than 150 degrees Fahrenheit and that could be contacted by the operator during normal starting and operating shall be thermally insulated or shielded.

R 408.15148. Logging equipment; operations.

Rule 5148. (1) The engine of a powered logging machine shall be shut off while being serviced or adjusted, except where operation is required for adjustment.

(2) If an operator leaves the seat of any logging equipment that has its engine running, then the transmission shall be placed in the park position and the brakes set. If equipment is to be left unattended, then the operator shall apply the brake locks, ground moving elements, and turn the power off.

(3) A person, except the operator, shall not ride on mobile logging equipment unless the equipment is provided with a passenger seat belt located under a canopy that is in compliance with the requirements of R 408.15144 and R 408.15146.

(4) A logging equipment operator shall do all of the following:

(a) Operate the equipment within the rated capacity and stability limitations.

(b) Ensure, before start-up and during operation of the equipment, that employees and other objects are not in danger of being struck. Moveable objects, such as a boom, grapple, or load, shall not be moved close to or over an employee.

(c) Check all controls for function and response before starting a work shift.

(d) When a signalman is used, operate the equipment only on a clearly understood signal by the designated signalman.

(e) When operating near other employees, signal intent to move before moving.

(f) Dismount from the equipment, stand clear, and be visible when forest products or equipment is loaded or unloaded on or from the equipment by other equipment.

(g) Not place undue shock loads on wire rope.

(h) Position or secure all moveable elements not in use for safe operation.

(5) When transporting logging equipment from one job location to another, the carrying vehicle shall be capable of sustaining the load and the load shall be secured against movement.

(6) Any overhead electrical distribution or transmission line shall be considered energized until the owner or utility indicates otherwise and the line has been visibly grounded. Where a line cannot be de-energized, the following clearances shall be observed:

VOLTAGE	CLEARANCE BOOM RAISED	CLEARANCE BOOM LOWERED AND NO LOAD
to 50 kV	10 feet	4 feet
51 to 345 kV	10 feet plus .4 inch per kV over 50 kV	10 feet
346 to 750 kV	10 feet plus .4 inch per kV over 50 kV	15 feet

(7) When winching, the logging equipment shall be positioned so that the winch line is near the alignment with the long axis of the equipment.

(8) If natural light is inadequate during a logging, decking, or loading operation, the loader or loading areas shall be artificially lighted.

(9) A person involved in logging operations shall not work under a suspended load.

(10) When logging operations involve manual loading, the carrier shall be positioned to provide an area free of recognized hazards between the carrier and the pile, and the log or pole shall be placed in a manner so that it will not roll or slip.

(11) When logging operations involve machine loading, all of the following provisions apply:

(a) The piles shall be located in an area free of recognized hazards.

(b) Only the operator shall be in the work area.

(c) The load shall be balanced and secured to prevent slippage and loss.

(12) A person shall not ride a logging crane load, grapple, or hook.

(13) Truck-mounted loading equipment used in logging operations shall be secured before leaving a loading area. A protruding object on a load shall be removed or caution flags shall be installed.

(14) A truck driver shall stop a logging vehicle, dismount, and check and tighten loose load binders either just before or immediately after leaving a woods road to enter a public road.

(15) A logging operator shall use care in driving under limbs, trees, and other overhanging obstructions.

R 408.15149. Machines generally.

Rule 5149. (1) An employer shall assure that each machine, including any machine provided by an employee, is maintained in serviceable condition. An employer shall assure that each machine, including any machine provided by an employee, is inspected before initial use during each work shift. Defects or damage shall be repaired or the unserviceable machine shall be replaced before work is commenced.

(2) An employer shall assure that operating and maintenance instructions are available on the machine or in the area where the machine is being operated. To maintain stability, the machine shall be operated within the limitations imposed by the manufacturer as described in the operating and maintenance instructions. Each machine operator and maintenance employee shall comply with the operating and maintenance instructions.

(3) A stationary logging machine and its components shall be anchored or otherwise stabilized to prevent movement during operations.

(4) An employee shall not ride on any load.

(5) After a machine engine is shut down, pressure or stored energy from hydraulic and pneumatic storage devices shall be discharged if the storage device can move the moving elements. Each moving element, such as blades, buckets, saws, or shears, shall be lowered to the ground or otherwise secured. The machine's transmission shall be placed in the manufacturer's specified park position and the brake or brake locks shall be applied.

(6) A machine shall be loaded, secured, and unloaded so that it will not create a hazard for an employee.

(7) Brakes shall be sufficient to hold each machine and its rated load capacity on the slopes over which it is being operated.

(8) Each machine placed into initial service on or after September 8, 1995, shall be equipped with a secondary braking system, which shall be effective in stopping the machine and maintaining parking performance regardless of the direction of travel or whether the engine is running and parking brakes that are capable of holding a stopped machine stationary are employed.

(9) Each machine shall be equipped with guarding to protect employees from exposed moving elements, such as shafts, pulleys, belts on conveyors, and gears, in accordance with the requirements of General Industry Safety Standard Part 7 "Guards for Power Transmission," as referenced in R 408.15102.

(10) Each machine used for debarking, limbing, and chipping shall be equipped with guarding to protect employees from flying wood chunks, logs, chips, bark, limbs, and other material.

(11) The guarding on each machine shall be in place when the machine is in operation.

R 408.15150. Vehicles.

Rule 5150. (1) An employer shall assure that each vehicle used to perform any logging operation, including any vehicle provided by an employee, is maintained in serviceable condition.

(2) An employer shall assure that each vehicle used to perform any logging operation is inspected before initial use during each work shift. Vehicle defects or damage shall be repaired or the unserviceable vehicle shall be replaced before work is commenced.

(3) The employer shall assure that operating and maintenance instructions are available in each vehicle. Each vehicle operator and maintenance employee shall comply with the operating and maintenance instructions.

(4) The employer shall assure that each vehicle operator has a valid operator's license for the class of vehicle being operated.

(5) Mounting steps and handholds shall be provided for each vehicle when necessary to prevent an employee from being injured when entering or leaving the vehicle.

(6) The seats of each vehicle shall be securely fastened.

(7) The rated capacity of a machine shall not be exceeded.

(8) The requirements of R 408.15148(2) and (4)(a), (b), and (h) and R 408.15149(7), (8), and (9) shall also apply to each vehicle used to transport an employee off public roads or to perform a logging operation, including a vehicle provided by an employee.

FELLING, LIMBING, BUCKING, AND SKIDDING

R 408.15151. Felling.

Rule 5151. (1) An employee, except the faller, shall not be closer to a manual or mechanical felling operation than twice the height of the tallest tree being cut.

(2) Before a cut is started, a feller shall check for the location of all of the following and plan and clear a path of retreat:

(a) Other employees.

(b) Dead limbs.

(c) Lean of the tree.

(d) Wind condition.

(e) Location of other trees and other hazards.

(f) Snow or ice accumulation.

(3) The retreat path shall extend diagonally away from the expected felling line, unless the employer demonstrates that such a retreat poses a greater hazard than an alternate retreat path. Once the backcut has been made, the feller shall immediately move a safe distance away on the retreat path and away from the tree being felled.

(4) If a tree falls on a power line, the utility shall be notified immediately and all employees shall remain clear until the utility advises that conditions are safe.

(5) The immediate supervisor shall be consulted when unfamiliar or unusually hazardous conditions necessitate the supervisor's approval before cutting is commenced.

(6) While manual felling is in progress, a yarding machine shall not be operated within 2 tree lengths of trees being manually felled. This subrule does not apply to yarding machines performing tree-pulling operations.

(7) Each danger tree shall be felled, removed, or avoided. Each danger tree, including lodged trees and snags, shall be felled or removed using mechanical or other techniques that minimize employee exposure before work is commenced in the area of the danger tree. If the danger tree is not felled or removed, it shall be marked and work shall not be conducted within 2 tree lengths of the danger tree, unless the employer demonstrates that a shorter distance will not create a hazard for an employee.

(8) Each danger tree shall be carefully checked for signs of loose bark, broken branches and limbs, or other damage before it is felled or removed. Accessible loose bark and other damage that may create a hazard for an employee shall be removed or held in place before felling or removing the tree.

(9) Felling on any slope where the rolling or sliding of trees or logs is reasonably foreseeable shall be done uphill from, or on the same level as, previously felled trees.

(10) Domino felling of trees is prohibited.

(11) Accumulations of snow and ice that may create a hazard for an employee shall be removed before felling is commenced in the area or the area shall be avoided.

R 408.15152. Working alone.

Rule 5152. A faller or bucker shall not work beyond hearing range of another employee unless a procedure has been established for periodically checking on the faller or bucker during the course of the work day.

R 408.15153. Lodged tree removal.

Rule 5153. A person shall not work under a lodged tree. A lodged tree shall be pulled or pushed down as soon as possible by mobile equipment in a manner which keeps an employee from being struck by the tree.

R 408.15154. Dangerous trees and snags.

Rule 5154. A dead, rotten, or broken limb or tree that is a hazard to road traffic woods operations, landings, or camps shall be felled before operations begin. Where such a tree may fall on a public road, a flagman shall direct traffic during felling operations.

R 408.15155. Springpoles; and other trees under stress.

Rule 5155. (1) When a springpole or other tree under stress is cut, an employee, other that the feller, shall not be closer than 2 tree lengths when the stress is released.

(2) An employee shall check for springpoles before making a bucking cut or limbing.

R 408.15156. Notch or undercut; back cut; hinge wood.

Rule 5156. (1) A notch or undercut shall be large enough, about 1/3 of the diameter, to safely guide the tree and reduce the possibility of the tree splitting. Side cuts shall also be used where appropriate.

(2) A back cut shall be made in each tree being felled. A back cut shall leave sufficient hinge wood to guide the tree's fall in the desired direction and to hold the tree to the stump during most of its fall. A back cut shall be about 2 inches above the undercut and as level as possible; however the back cut may be at or below the horizontal cut in tree-pulling operations.

(3) Before starting a back cut, a faller shall determine that the impact area is clear of other employees.

(4) The saw chain shall be stopped before the feller starts to retreat.

(5) Where a tree is likely to slide or roll, a feller shall cut from the uphill side and keep uphill from previously felled trees.

R 408.15157. Bucking or limbing positions; chipping.

Rule 5157. (1) If possible, a limber shall stand on the opposite side of the tree trunk from a limb being removed.

(2) If working on a slope, a bucker shall work from the uphill side. When the employer demonstrates that it is not feasible to buck or limb on the uphill side, the tree shall be secured with chocks to prevent it from rolling, sliding, or swinging.

(3) Trees piled for bucking and logs in a deck shall be piled in a manner that is not hazardous.

(4) Before bucking or limbing wind-thrown trees, precautions shall be taken to prevent the root wad, butt, or logs from striking an employee. The precautions include chocking or moving the tree to a stable position.

R 408.15158. Skidding; yarding.

Rule 5158. (1) A person shall not ride on a log being skidded.

(2) A skidder operator shall use caution if operating near another person.

(3) If on a hill, a skidder shall not be operated parallel to the contour of the slope.

(4) If skidding equipment equipped with blades is moving, then the blades shall be carried high enough to avoid objects. If skidding equipment is parked, the blades on the skidding equipment shall be lowered to the ground.

(5) A person shall not hook, adjust, or cross winch lines that are under tension.

(6) A choker setter shall do both of the following:

(a) Work on the uphill side of a log.

(b) Position the choker near the end of the log or tree length to allow turning of the prehaul or skidding vehicle, to prevent the penetration of the operator station, and to reduce the possibility of striking the wheel or track.

(7) A knot shall not be allowed in a wire rope; however, looping the wire rope around the log for purposes of skidding is not considered a knot.

(8) Only the loading or unloading machine operator and other employees the employer demonstrates are essential shall be in the loading or unloading area during the skidding operation.

(9) A yarding line shall not be moved unless the yarder operator has clearly received and understood the signal to do so. When in doubt, the yarder operator shall repeat the signal and wait for a confirming signal before moving any line.

(10) A load shall not exceed the rated capacity of the pallet, trailer, or other carrier.

(11) Towed equipment shall be attached as specified in R 408.15146(4).

(12) The yarding machine or vehicle, including its load, shall be operated at a safe distance from all obstructions that may create a hazard for an employee.

(13) Each yarded tree shall be placed in a location that does not create a hazard for an employee and in an orderly manner so that the trees are stable before bucking or limbing is commenced.

R 408.15165. Water.

Rule 5165. A person working in or around water shall wear a life jacket and shall not work alone.

R 408.15166. Storage.

Rule 5166. (1) Logs and poles shall be piled in a stable manner.

(2) When steel banding is used, it shall be capable of containing the imposed load and shall be placed when the bundle is close to the ground.

(3) An employee shall not place his or her body underneath a bundle of logs or poles.

R 408.15167. Chipping.

Rule 5167. Chipping shall be accomplished as prescribed in R 408.15231 (1), (3) and (5) of General Industry Safety Standard Part 52, “Sawmills,” as referenced in R 408.15102.

TRUCK EQUIPMENT AND OPERATION

R 408.15172. Side, end and trip stakes.

Rule 5172. (1) A side or end stake used in hauling logs shall be made of steel or dense hardwood of sufficient strength to remain at a 90 degree angle from the bed of a loaded truck.

(2) A trip stake shall be released from the side of the truck or trailer opposite the location of the trip stake.

R 408.15175. Transport vehicles.

Rule 5175. (1) A transport vehicle shall be positioned to provide working clearance between the vehicle and the deck.

(2) Only the loading or unloading machine operator and other personnel the employer demonstrates are essential shall be in the work area during loading and unloading.

(3) A transport vehicle operator shall not remain in the cab during loading and unloading if the logs are carried or moved over the truck cab, unless the employer demonstrates that is necessary for the operator to do so. If the transport vehicle operator remains in the cab, then the employer shall provide protection for the operator, such as reinforcement of the cab.

(4) Each log shall be placed on the transport vehicle in an orderly manner and be tightly secured.

(5) The load shall be positioned to prevent log slippage or loss during handling and transport.

(6) Each stake and chock which is used to trip loads shall be constructed so that the tripping mechanism is activated on the side opposite the release of the load.

(7) Each tie down shall be left in place over the peak log to secure all logs until the unloading lines or other employer demonstrated equivalent protection has been put in place. A stake that is strong enough to withstand the forces of shifting or moving logs shall be considered equivalent protection if the logs are not loaded higher than the stake.

(8) Each tie down shall be released only from the side on which the unloading machine operates, except as follows:

(a) When the tie down is released by a remote control device.

(b) When the employee making the release is protected by racks, stanchions, or other protection that the employer demonstrates is capable of withstanding the force of the logs.

(9) The transport vehicle operator shall assure that each tie down is tight before transporting the load. While enroute, the operator shall check and tighten the tie down if there is reason to believe that the tie downs have loosened or the load has shifted.

(10) Each deck shall be constructed and located so that it is stable and provides each employee with enough room to safely move and work in the area.

R 408.15180. Firewood and log-splitting operations.

Rule 5180. (1) An employee who operates a log splitter shall also load the logs into the splitter.

(2) The bed of a hydraulic or mechanical ram splitter shall be constructed so that the log or firewood is in a stable position without being held by the operator or any other employee at the beginning of the splitting operations.

(3) Wood shall be split only in the direction of the grain.

(4) When loading the splitter, an employee shall hold logs or firewood on the sides and not on the ends.

(5) An employee shall keep his or her hands away from the ram, wedge, and partly split logs and firewood.

(6) A splitter shall not be left unattended while running.

(7) A splitter engine shall not be refueled while running.

(8) A splitter shall be set up so that operator is not standing on a slope or a slippery surface.

(9) With the ram fully extended, a clearance of at least 1 inch, but not more than 2 inches, shall be maintained between the pressure plate and the wedge.

(10) An auger log splitter shall include a permanently attached means to prevent log rotation.

(11) The operator control on a splitter shall be of the deadman type, which automatically returns to the off or neutral position if the operator removes his or her hands from the control.

(12) The splitting control for ram-type splitters shall move in the same direction as the splitting action.

(13) The operating controls of a log splitter shall be located so the operator can operate the log splitter without being exposed to unexpected contact with a log or moving machinery.

R 408.15181. Power takeoff.

Rule 5181. (1) Power takeoff-driven equipment shall be guarded to prevent employee contact with the positively driven, rotating member of the power-driven system. Where power takeoff-driven equipment is of a design requiring the removal of the master shield, the attaching equipment shall include protection from the portion of the tractor power takeoff shaft that protrudes from the tractor.

(2) A tractor having a power takeoff shaft shall be equipped with a master shield on the power takeoff shaft, except as permitted in subrule (1) of this rule. The shield shall be strong enough to prevent permanent deformation when a 250-pound operator mounts or dismounts the tractor and uses the shield as a step.

Rule 3506 Rescinded.

Rule 5006 Rescinded.

APPENDIX		
SAE STANDARD	**ISO STANDARD**	**SUBJECT**
SAE J1040	ISO 3471-1	Performance criteria for rollover protective structures (ROPS) for construction, earthmoving, forestry and mining machines.
SAE J397	ISO 3164	Deflection limiting volume ROPS/FOPS laboratory evaluation.
SAE J231	ISO 3449	Minimum performance criteria for falling object protective structures (FOPS).
SAE J386	ISO 6683	Operator restraint systems for off-road work machines.
SAE J185	ISO 2897	Access systems for off-road machines.

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