



Logger Safety Checklist Booklet

Date put in use: _____

Booklet Identification

(Use one booklet per logging crew and shop location)

Company: _____

Crew Name or Number: _____

Owner(s): _____

Address: _____

Phone: _____

Date to request new booklet: _____

(12 months from receipt)



It all begins with paper.®

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Table Of Contents

How to use this booklet	2
Extreme danger conditions	3
Quick safety checklist.....	4
Company training policy	5
Company safety policy	6
Minimum safety rules	7
Company drug and alcohol policy	11
What to expect from an NCDOL inspection	12
Safety meeting topics	13
Safety meeting records	14
Personal protective equipment requirements	26
Equipment operation manuals.....	27
Lockout/tagout policy	28
Hazard communication (HAZCOM) program	29
HAZCOM materials master list.....	31
Emergency response plan for hazardous materials	32
First aid training record	34
First aid kit contents	35
Bloodborne pathogen exposure control plan.....	36
Hearing conservation—what it means to employers	38
Hearing conservation program	40
Heat stress management program.....	41
Annual heat stress training.....	42
Job safety and health and associated posters	44
Safe behavior observations	45
Information and phone numbers	48
Local hospital information	49
NCDOL logging operations interpretive guide	51
Free on-site safety consultation	71
Logger safety checklist booklet order form.....	72

How to Use This Booklet

Keep this booklet on the job site at all times.

Booklets should be used for a one year period. Another should be requested prior to the twelfth month (see back page for ordering information).

Blank lines (_____) require written information such as company name or signatures and dates, etc. Record all entries in ink. You may photocopy materials out of this book and keep this book as a master copy.

This booklet contains sample forms, sample policies and guidelines for maintaining safety records. Formats are suggested and can be modified by each operation. Use of this booklet and completion of suggested forms will assist with OSHA (Occupational Safety and Health Act) requirements as related to logging operations. A list of agencies and contacts is included for additional information and consultation.

This booklet is not a safety manual with everything you will need. It is intended to be a record of activities and a source of useful information. Each company is encouraged to begin its own manual with detailed information to backup this booklet.

Special thanks to the N.C. Department of Labor, Occupational Safety and Health Division, for guidance in development and technical review of this publication.



Extreme Danger Conditions

Be alert for these AT ALL TIMES:

Are workers exposed to overhead hazards wearing hardhats?

Are lodged or hung trees flagged and pulled down as soon as possible?

Does the loader operator avoid swinging the boom over other workers?

Do deckmen maintain a safe distance from the loader?

Does the feller check for overhead hazards before felling a tree?

Do chain saw fellers avoid working during high wind conditions?

Are workers a safe distance from trees being felled?

Are workers a safe distance from moving skidders and pull logs?

Quick Safety Checklist

Date: _____

General Operation

	YES	NO
All employees properly trained in the safest way to perform their job(s).	_____	_____
All employees in visual or audible contact with another employee.	_____	_____
All employees wearing hardhats when exposed to overhead hazards.	_____	_____
Chain saw operators wearing all required personal protective equipment.	_____	_____
All equipment operated a safe distance from other equipment and employees.	_____	_____
Adequate handholds and footing surfaces provided on equipment.	_____	_____

Loader/Deck Area

	YES	NO
Operator does not swing boom or loads over workers.	_____	_____
Truck drivers exit cab and stay safe distance from loading operation.	_____	_____
All employees on ground stay safe distance from loading area.	_____	_____
Loader has protective cab guarding.	_____	_____
Logs placed properly on trucks (tightly secured below standards).	_____	_____

Felling Operations

	YES	NO
Minimum two tree length distance between felling and closest workers.	_____	_____
All lodged and hung trees pulled down as soon as possible.	_____	_____
Chain saw safety devices present and operational.	_____	_____
Overhead hazards checked before felling.	_____	_____
High wind condition avoided when manually felling.	_____	_____
Manual fellers have provided a clear path of retreat.	_____	_____
Chain saw used properly to prevent saw kickback.	_____	_____
Manual felling cuts result in directional felling.	_____	_____
Domino tree felling or using pusher trees prohibited.	_____	_____
All employees maintain at least 300 feet from high speed disc cutters.	_____	_____
High speed cutter teeth, teeth holders and disc properly maintained.	_____	_____
Protective cab structure and guards on mechanical cutters in place.	_____	_____
Undercut (notch) is at an appropriate depth and no bypass present—both cuts shall meet.	_____	_____
Proper hinge wood is present at two corners or continuous across the stump.	_____	_____
No swing cuts are allowed.	_____	_____

Manual Limbing and Bucking

	YES	NO
Area clearly identified and free of random equipment movement.	_____	_____
Skidder operators have clear view of approach and eye contact with limbers.	_____	_____
Limbers/bucker determine direction of limb or log movement before cutting.	_____	_____
Spring poles cut and removed safely.	_____	_____
Chain saws controlled during cuts and traveling between cuts.	_____	_____

Skidding Operation

	YES	NO
Adequate guarding of cab front, sides and rear.	_____	_____
Safe operating speeds and seat belts worn.	_____	_____
Passengers prohibited.	_____	_____

Company Training Policy

How and when employees are trained:

How existing employees receive refresher training:

How training is documented (equipment, first aid, HAZCOM, hearing conservation, minimum safety rules, safety meeting, personal protective gear, emergency response, etc.):

Safety workshops or training courses (locations, who will attend):

What training materials are used (videos, handouts, checklists, etc.):

Time schedule for training new and existing employees:

Company Safety Policy

Our policy includes the following:

1. A responsible employee in a position of authority will be appointed Safety Coordinator.
_____ has been appointed to fill this position.
2. Owners, supervisors, foremen and employees are responsible for implementing this policy by working in a safe manner.
3. Regularly scheduled safety meetings will be held with all employees.
4. All accidents will be reported, investigated and actions taken to prevent reoccurrence.
5. All new employees will be trained in safe working practices for the particular jobs and closely supervised until they are signed off and they are fully capable of safe performance.
6. All employees are required to use personal protective equipment provided by this company or the employee. Equipment will be kept in good condition.
7. Employees will report any and all accidents to their immediate supervisor.
8. All employees are expected to cooperate in keeping work areas clean and free of hazards. Employees will report any observed hazard to their immediate supervisor.
9. Each employee is required to keep a safe distance from other employees while moving equipment.
10. Employees will operate equipment as instructed in a safe and reasonable manner.

11.

12.

13.

Minimum Safety Rules

1. All accidents, no matter how slight, must be reported to your supervisor IMMEDIATELY.
2. Any employee injured on the job or requiring medical treatment must first report the injury to her/his supervisor on the same shift it occurs. A medical emergency is an open wound requiring stitches, loss of consciousness, or any injury involving broken bones. If you go to the Emergency Room or to a physician on your own, you may have to pay your own bill. The company has the right to refuse payment when the company has approved a medical provider for treatment and you elect to use the services of another physician without obtaining consent from the company.
3. Personnel protective equipment (hard hats, chaps, eye protection, ear protection, gloves, etc.) will be provided and must be worn in designated areas at all times.

Designated areas where personal protective equipment is required are as follows:

4. All workers must wear adequate footwear. Tennis shoes, platform shoes, sandals, etc., are not acceptable.
5. Use of alcohol and/or illegal narcotic drugs on the job or the debilitating effects of their prior use shall not be permitted and shall be grounds for immediate termination of employment. Personnel on each shift should inform their supervisor of the medications they are taking.
6. Machine guards and/or protective shields, barricades, safety devices, etc., shall not be removed except by authorized personnel such as mechanics, maintenance personnel, etc., and shall be reinstalled as soon as maintenance activities are completed. Such machinery/equipment is not to be operated until a maintenance person declares it operable.
7. Machine and equipment operators must ensure that all guards and shields are in place and in proper working condition prior to beginning and during operations. Such machinery/equipment is not to be operated until a maintenance person declares it operable.
8. Equipment shall be **LOCKED AND TAGGED OUT** prior to performing any maintenance, making any adjustments, or removing debris. Allow coast down time for all parts to completely stop moving before starting work. Make sure the equipment is at a “zero energy” state.
9. When “jump starting” mobile equipment, employees must insure that its running gear is in neutral, brakes are locked, head/blades and/or buckets are lowered, and that no safety device designed to prevent machine movement is being bypassed.

10. **HORSEPLAY** and running shall not be permitted on the premises, to include all work areas inside and outside the buildings and parking lots.
11. If you are unfamiliar with an operation or machine, you must first check with your supervisor prior to proceeding. The company is required to sign you off as 'trained' before you operate equipment.
12. Any unsafe condition noted must be reported to your supervisor, who is responsible for having the conditions corrected prior to proceeding.
13. When mobile equipment (skidders, dozers, front end loaders, feller bunchers, etc.) are not in operation or parked, blades, buckets, cutting heads, etc., must be lowered to ground level.
14. Employees must wear seat belts when mobile equipment is being operated, i.e., skidders, dozers, loaders, feller bunchers, tractor-trailers, or other vehicles are being operated or when riding as a passenger in a vehicle.
15. Hitching a ride on any mobile equipment (skidders, dozers, front-end loaders, feller bunchers, etc.) is not allowed.
16. Employees shall not talk, signal, or distract in any manner another employee while they or you are operating moving and/or mobile equipment, i.e., chain saws, skidders, loaders, feller bunchers, etc.
17. Before starting manual felling, the employee cutting the tree must make sure all other employees are a safe distance away from the manual felling tree stump.
18. Workers must keep a minimum distance of at least two tree lengths between themselves and mobile equipment and/or felling operations.
19. Never leave a lodged or hung tree. The area in which the lodged tree is located is to be flagged and the skidder operator immediately notified to pull the hazardous tree to the ground immediately.
20. Employees working on the ground (stumpers, limbers, skidder operators, etc.) shall always observe for overhead hazards (lodged trees, hung limbs, etc.).
21. Employees cutting down trees shall have a clear path of retreat before beginning a cut to ensure that a line of escape is available.
22. Always plan the direction of fall of any tree being felled. Proper undercut must be made on all trees where necessary. Never cut a standing tree completely through. Sufficient wood should be left between the undercut and the felling cut that the tree can hinge to prevent kickback.
23. Chain saw operators must always grip the saw firmly with both hands, wrap the front hand-hold bar with the thumb and never cut with the tip of the chain saw blade.

24. All chain saws must be equipped with a properly functioning chain brake, throttle interlock and chain catch. Chain saw operators must wear protective chaps, eye and face protection and hearing protection.

25. Employees shall avoid standing between logs that may roll while being bucked, or position themselves so as to be thrown or struck while logs or the loader is moving poles.

26. Knuckleboom loader operators must never swing the boom over employees.

27. Loader operators shall never load log trucks more than $\frac{1}{2}$ the height of the diameter of the top-most logs over stationary standards. The load may be rounded in the middle so as to secure and balance the load.

28. Do not set up the loader or deck under power lines or over underground utilities.

29. Truck drivers must be at a safe distance away from the truck during loading or unloading operations.

30. When in the immediate vicinity of a log truck each employee shall constantly be aware of and position himself in such manner so as to ensure that he will not be struck by material falling from the truck.

31. All truck drivers must comply with all state and federal laws, statutes, and regulations relating to highway safety (speed and weight limits, driving time, stop signs, etc.)

32. Each employee will be trained in, and required to use, proper lifting techniques and body mechanics. When confronted with lifting and/or moving any object for which the employee must exert more force than that required in the normal performance of his routine duties, he is to either seek the assistance of an adequate number of employees to lift and/or move the object in a safe manner, or lift and/or move it by mechanical means.

NOTE: These safety rules have been developed for the protection of your safety and health. Abiding by these rules will make our operation more efficient and successful; however, repeated violation of these safety rules will be grounds for termination of employment. The following actions may be taken for repeated violations:

First Offense: _____

Second Offense: _____

Third Offense: _____

Other disciplinary actions:

I have read and understand the safety rules listed above and agree to comply with the company's safety requirements.

EMPLOYEE SIGNATURE:

DATE:

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Company Drug and Alcohol Policy

As a condition of employment, I hereby agree to the following rules and regulations pertaining to illegal drugs, alcohol and legally prescribed medical drugs:

1. I agree to notify my employer of the need for me to take any prescription drug.
2. I agree not to operate any equipment or motor vehicle while taking a prescribed drug that may impair the safe performance of my duties.
3. I agree never to drink alcohol when operating equipment on the job.
4. I agree never to use any illegal or controlled substance while employed.
5. I agree never to report for work while under the influence of alcohol or illegal drugs. I will advise my supervisor upon reporting to work if I am taking medication prescribed by a doctor.
6. I agree that if I am asked to take a test for illegal or controlled substances and refuse, that refusal will constitute my immediate voluntary resignation.
7. I agree that if I violate any of the above rules and regulations, my employment will be terminated immediately.
8. I understand that an N.C. workers' compensation claim may be denied if testing is positive for alcohol or controlled substances.

Date: _____

Signed: _____

Witness: _____

Form may be used as master, photocopies may be made. Signed forms should be kept with employees' personnel files.

What to Expect From an NCDOL Inspection

An NCDOL Inspector's Credentials

When an NCDOL compliance officer arrives at the establishment or inspection site, he or she will display official credentials. The compliance officer will ask to meet with the employer or an appropriate employer representative. Employers should always ask to see the compliance officer's credentials.

Opening Conference

In the opening conference, the compliance officer will explain how and why the establishment or site was selected for an inspection. The officer will instruct whether the inspection will be comprehensive or partial. Also, the compliance officer will determine whether the establishment or site is undergoing consultation from an NCDOL funded consultant program or whether an inspection exemption is being pursued or has been received. If so, the inspection may be terminated. The compliance officer will also specify the following:

- State the purpose of the visit.
- Explain the scope of the inspection.
- Ascertain the correct mailing address, telephone number, number of employees, etc.
- Preview the accident and injury records (OSHA form 300), and written safety and health programs
- Determine whether there are any trade secrets at the establishment or site as a result of questioning the employer or employer's representative. Trade secrets are treated confidentially. The employer will be asked to select an employee representative to accompany the compliance officer during the inspection. This selection process may include a bargaining agency representative, safety committee selection or employee's selection.

The Inspection Process

The inspection tour will likely proceed from the beginning of the work process to the finished product. The compliance officer will observe safety and health conditions and practices, interview employees privately, and make every effort to minimize any work interruptions. The compliance officer will also, if appropriate, take photos, examine records, collect samples, monitor employee's exposure, and survey existing engineering controls.

Closing Conference

At the conclusion of inspection, the compliance officer will conduct a closing conference with the employer and the employee representative(s). A free discussion will take place of the alleged violations of the NCDOL standards or referenced (ANSI, NEC, etc.) standards that were observed during the inspection. Additional problems and needs may be discussed (safety and health).

The compliance officer will not indicate any specific proposed penalties. The employer is informed of appeal rights and can request an informal conference or notice of contestment. The employer has 15 working days from the time of receiving the citation and proposed penalty to notify the OSH director in writing.

Safety Meeting Topics

Frequent safety meetings are very useful with a short weekly meeting recommended. A more lengthy and detailed meeting will be necessary for some areas. Topics with an asterisk * are required by NCDOL to be reviewed annually with employees.

Use the enclosed **SAFETY MEETING** forms to document these monthly meetings.

- Personal Protective Equipment +
- Review of Equipment Operation Manuals +
- Lockout/Tagout Procedures/ZES (zero energy state) * +
- Hazard Communication (HAZCOM) +
- Emergency Response Plan +
- First Aid +
- Bloodborne Pathogens * +
- Hearing Conservation Program * +
- Fire Extinguisher Training *
- Driver Training/DOT Review *
- Company Safety Policies *
- Heat Stroke and Heat Exhaustion +
- Log and Transport Truck Inspection *

* denotes training required by NCDOL on an annual basis

+ denotes sample safety meeting forms enclosed

Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

[illegible]

Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

[illegible]

Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

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Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

[illegible]

Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

This image shows a blank sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible on each side of the central binding area. The paper appears to be from a notebook or a standard ruled document.

Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

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Topic: _____

Presented by: _____

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Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

[illegible]

Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

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Presented by: _____

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Employees in attendance (signatures):

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Safety Meeting Record

Date: _____

Location: _____

Topic: _____

Presented by: _____

Brief outline of discussion (or staple in training material):

Employees in attendance (signatures):

[illegible]

Personal Protective Equipment Hazard Assessment

Check (✓) what is required:

<u>EQUIPMENT</u>	<u>LOADER</u>	<u>SKIDDER/ BUNCHER</u>	<u>SAWHAND</u>	<u>TRUCK DRIVER</u>
Hard Hat	_____	_____	_____	_____
Face Screen	_____	_____	_____	_____
Eye Protection	_____	_____	_____	_____
Hearing Protection	_____	_____	_____	_____
Safety Shoes	_____	_____	_____	_____
Saw Chaps	_____	_____	_____	_____
Gloves	_____	_____	_____	_____
Seatbelt	_____	_____	_____	_____
Other:	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

I understand the above company requirements for proper use of personal protective equipment.

EMPLOYEE SIGNATURE:

DATE:

Equipment Operation Manuals

Equipment operation manuals must be with each machine on the job site. Use them as training materials with each new employee before the new job begins. Review the manuals each year with all employees who will operate that specific piece of equipment.

EQUIPMENT:

OPERATOR(S):

DATE OF REVIEW/TRAINING:

[illegible]

Lockout/Tagout Policy

1. All logging equipment, transport vehicles, and implements will have a lockout or tagout procedure to protect employees conducting service or maintenance. Actions will be based on procedures in the equipment operator's manual.
2. Equipment will be shut down and placed in a zero energy state (ZES) for areas on the equipment where work will be performed. Examples of energy include gravity (rolling down a hill, broken floor jack), hydraulic pressure (falling boom, falling blade, arms or grapple closing), electrical (equipment switch-on, shock), chemical (ignited fuel can), and air pressure (changing tires).
3. Persons authorized to service and repair equipment must eliminate energy from the affected equipment and lockout or tagout the equipment to be sure that another person does not energize the equipment. Tags and locks should be readily available and all employees trained in their use. **Locks are a prevention tool and tags are a warning tool.**
4. When maintenance must be performed on any elevated attachment, chain or block the blade or lifting devices with a positive means of support to prevent injuries. If welding on any piece of equipment, disconnect the battery to prevent potential injury.
5. No person is to remove or bypass a lockout or tagout device. Only the employee who placed the tag or lock may remove it.
6. Replace all guards prior to starting the equipment.

I have read the above policy on lockout and tagout. I understand and agree to follow the stated procedures.

EMPLOYEE SIGNATURE:

DATE:

Hazard Communication (HAZCOM) Program

This HAZCOM Program was developed to make employees aware of chemical hazards. Information is provided to employees about chemicals used on the job through a master list of chemical names, Material Safety Data Sheets (MSDS) kept on the job site in a booklet, proper labeling of containers, training for new employees and annual reviews for all employees.

The HAZCOM Program Coordinator for this company is _____ (name). The Coordinator is responsible for overseeing the program.

Complete Chemical List

A list of any hazardous materials used on our job sites is available at _____ (location). This list is updated as needed.

Master Chemical List

A list of common and frequently used hazardous materials is available at _____ (location). This list is kept with the MSDS file on the job site and has an MSDS for each chemical listed. First aid treatments are shown.

Material Safety Data Sheets (MSDS)

Information on hazardous materials found on the job site is available to any and all employees. The MSDS file is found on the job site at _____ (location).

Container Labeling

Hazardous material containers will be clearly labeled as to: contents, correct hazard warning or symbol, name and address of manufacturer. Labeling is not required for portable containers intended for immediate use.

Training

1. New employees must attend a training session before working with hazardous materials. This training is to cover:

- Information contained in MSDS.
- Physical and health hazards for job site chemicals.
- How presence or release of materials is detected.
- How to protect against hazards by personal protective equipment, special handling.

2. All employees must receive annual refresher training in the above as well as immediate training if a new material is added or a new hazard is determined.

HAZCOM Materials Master List

An MSDS for each of materials listed below is available at:

Materials:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
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_____	_____
_____	_____
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_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

This master list was prepared by and will be updated by:

Emergency Response Plan for Hazardous Materials

Most spills will involve fuel oil, motor oil or hydraulic oil. Only fuel oil is classified as a hazardous material. The following actions will be used to handle leaks and spills and to prevent any environmental damage.

Designated persons will be trained as a first response team. Training will include: how to contain spills, how to cleaning up spills, recognizing hazards in clean up and limits on ability to clean up.

Reporting the spill

Report any and all leaks or spills to your immediate supervisor. The reporting sequence is as follows:

Employee to Supervisor, Supervisor to Company Owner, and then N.C. Emergency Management, if required. Phone Number: 1-800-858-0368.

Spills that threaten lives or have significant environmental threat must be reported immediately. If you cannot reach someone in the chain of command, then report directly to N.C. Emergency Management.

When talking to N.C. Emergency Management, be sure to include the following:

- give good directions to spill site
- do not hang up until directed to do so
- record name of person to whom you spoke to and the time you spoke with them
- write a brief report including calls made, public agency answers and responses, and actions taken by you and other company employees

Handling the spill

If the material is listed as hazardous or you do not know what it is:

- do not attempt containment or clean up
- stay a safe distance away
- allow no one to enter the area, use flagging if necessary
- large volumes of gasoline or other volatile substances should be avoided
- call and wait for the first response team

If the material is known and not hazardous:

- stop the release if you have been trained and no other dangers exist.

Emergency Response Plan

The “First Response Team” of trained employees is:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Spill cleanup tools and supplies consist of:

and are located at: _____

The following employees have reviewed this emergency response plan and understand their duties.

EMPLOYEE SIGNATURE:

DATE:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

First Aid Training Record

The following employees have completed the indicated training. Photocopies of signed certification cards are on file at:

_____ (location).

Completion Dates:

[illegible]

Exact requirements for which employees must complete this training are stated in the NCDOL Logging Operations Interpretive Guide, which is located in the last section of this booklet.

First Aid Kit Contents

Kits must be available on each job site and in transport vehicles.

Large Kits—Located on job site at:

The contents of the first-aid kit listed should be adequate for small work sites, consisting of approximately two or three employees. When larger operations or multiple operations are being conducted at the same location, additional first aid kits should be provided at the work site or additional quantities of supplies should be included in the first aid kits.

Contents include:

1. Gauze pads (at least 4x4 inches)
2. Two large gauze pads (at least 8x10 inches)
3. Box of adhesive bandages (band-aids)
4. One package gauze roller bandage at least 2 inches wide
5. Two triangular bandages
6. Wound cleaning agent, such as sealed moistened towelettes
7. Scissors
8. At least one blanket
9. Tweezers
10. Adhesive tape
11. Latex gloves
12. Resuscitation equipment, such as resuscitation bag, airway or pocket mask
13. Two elastic wraps
14. Splint
15. Directions for requesting emergency assistance

Compact Kits—carried by chain saw operators working away from the logging deck

Kits, at a minimum, should contain:

1. Wound compress
2. Latex gloves
3. Assorted band-aids
4. Antiseptic swipes

Items should be packaged to remain clean and dry.

Contents lists are based on the Federal OSHA Logging Operations Standard and the NCDOL Logging Operations Interpretive Guide.

Bloodborne Pathogen Exposure Control Plan

This plan has been developed to minimize and prevent exposure of employees to disease causing microorganisms in human blood. All employees who could be exposed to blood or infectious materials are involved in this program. The OSHA Bloodborne Pathogens Standard applies to those persons who are first aid trained and those who would be exposed while not in a first aid capacity.

Bloodborne Pathogens

Those agents, primarily viruses, present in human blood, semen, vaginal secretions, internal body fluids, and any body fluid contaminated with blood. Urine, feces, and vomit are not considered infectious unless contaminated with blood. The two worst pathogens are considered to be HIV/AIDS (Human Immunodeficiency Virus) and HBV (Hepatitis B Virus). Of these two, HBV is the most prevalent and most contagious, while HIV/AIDS can be fatal.

Hazards

HIV/AIDS and HBV can be spread in the workplace by blood contact with an open wound (scratch or cut), blood contact with mucous membranes (mouth, eyes, nose), or being stuck with a used hypodermic needle (diabetic use).

Clothing and other materials can become contaminated and can be sites for infection. An employee can be exposed by using improperly cleaned equipment where blood and/or body fluids are present, such as touching and removing blood-soaked clothing or bandages. Someone away from the job can also be affected, such as a spouse or garbage collector who comes in contact with the contaminated material.

Prevention

Protective Equipment: protective items must be used during administration of first aid or CPR (disposable rubber gloves, eye protection, and mouthpiece or airway device). These must be readily available on the job site.

Handling: once-used rubber gloves must be disposed of. Employees must wash their hands immediately after removal of disposable gloves. Equipment in contact with blood or body fluids must be washed immediately with soap and water.

Clothing and Articles: personal clothing and equipment must be cleaned, laundered, disposed of or replaced, if contaminated. The boss logger supervises the disposal as needed. Consider calling the local health department or other medical authorities for disposal assistance. Sharp objects must be placed in puncture-proof bags.

Housekeeping: All equipment and work areas exposed to blood or other body fluids must be cleaned with a disinfectant. All tarps and protective covers should be cleaned or replaced, if contaminated. Eating, drinking, smoking, and applying contact lenses are prohibited in work areas where there is a possibility of contact with human blood or body fluids.

After Exposure and the Follow-up: The employee reports the exposure immediately to his supervisor. The boss logger writes down the method of exposure, and details of the incident. Personal data such as identification can be included in the medical file. Blood from the victim and exposed person is collected and tested. Medically indicated treatment to prevent disease will be given to the employee. Counseling of the employee regarding results of the finding and documentation from the health care provider will be given to the employee. A record of illnesses of the employee after the incident shall be documented for one year by the employer.

An annual training session will address this plan. Names of attendees and the names of certified individuals will be documented. It is recommended that this be done in conjunction with first aid/CPR training.

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[illegible]

- Maintain employee illness records for one year after exposure.
- Maintain training records for three years.
- Maintain employee medical records for thirty years after leaving employment.

Hearing Conservation—What It Means to Employers

Hearing loss can happen slowly over a period of time, or it can happen instantly with exposure to a loud, sudden noise. Either way, it can affect you as an employer.

If your employees work in conditions where they have to shout to be heard, your company probably falls within OSHA guidelines with regard to hearing conservation. Effective April 1983, OSHA amended the requirements for occupational noise exposure. The Hearing Conservation Amendment reduced the allowable noise exposure for employees to 85 decibels per eight-hour period. Most machinery used in the lumber and logging industry ranges from 85 to 110 decibels.

If you have such noise levels, you should have a hearing conservation program in place. You might say, “I provide hearing protection, isn’t that enough?” Not according to OSHA. A complete hearing conservation program consists of five areas:

- Sound level measurements
- Audiometric testing and evaluation
- Hearing protection
- Education
- Recordkeeping

Sound Level Measurements

You have to know how loud your equipment is to know if you should have a program. These measurements determine what type of hearing protection your employees should use. They also help determine who should be included in the program. Many insurance companies will measure your sound levels free of charge. The N.C. Department of Labor also has a program to measure noise levels for small businesses, although sometimes there’s a waiting period. You can also take your own sound level measurements if you have a calibrated sound level meter. Most industrial audio logical companies can explain how to use this equipment. Some companies may allow you to borrow a sound level meter. These options can save your company money; however, certain criteria must be met.

Audiometric Testing

Hearing tests are conducted at least once each year. The first test is called the baseline test. This determines the employee’s hearing threshold, the level at which they can just hear a tone presented at each frequency. Each year thereafter the employee is retested. The results are compared to the baseline to measure any changes in hearing. An audiologist or medical professional makes appropriate recommendations; a change in hearing protection, ensuring employees are wearing their protection correctly, medical referral. If there is a significant change at certain frequencies, known as a standard threshold shift (STS), the incident is recorded on the OSHA-300 forms.

Hearing Protection

Employees should be provided with adequate hearing protection. This can be in the form of formable, disposable ear plugs, hard rubber plugs, ear muffs, customized hearing protection, etc. There are a variety of different options. It's not enough, however, just to provide hearing protection. As an employer, it's also your responsibility to make sure that the hearing protection is worn and it is worn correctly. Hearing protection should be treated just like other protective devices. How do you handle an employee who doesn't wear safety glasses or an employee who doesn't wear safety boots?

Education

Education is considered to be one of the most important aspects of the hearing conservation program. NCDOL requires that specific topics be covered in safety sessions, which should be conducted each year. Employees are much more likely to wear their hearing protection if they see how it can protect them.

Recordkeeping

When NCDOL inspectors come into the workplace, one of the first things they request is documentation. Written documentation proves that testing and training were conducted. You should keep all employee test results, sound level measurements and records of educational sessions (who attended, topics covered). It is important not only to have a hearing conservation program to avoid OSHA citations, but also to protect the health and well-being of your employees. Hearing loss is painless, progressive, permanent and preventable!

Hearing Conservation Program

Protecting the hearing of employees is a priority. This operation will take the following steps to help prevent hearing loss:

1. All employees will wear hearing protection in areas where noise levels are above 85 decibels.

2. Noise levels can be expected to be in the following ranges at full power:

- Chain saw (105-110 decibels)
- Skidder (100-105 decibels)
- Loader (100-105 decibels)
- Chipper (100-110 decibels)
- Grinder (100-110 decibels)
- Feller buncher (100-110 decibels)

An annual noise level check, listed above, should be made to identify high noise areas.

3. Employee training will be conducted for those exposed to noise above 85 decibels. This will include:

- A safety meeting on hearing conservation.
- A discussion on proper types of protection and their uses.
- Being told to wear hearing protection.
- Documentation on a safety meeting record form.

4. Employees exposed to noise over 85 decibels will wear one of the following approved types of protection:

- Moldable inserts,
- Ear muffs attached to hardhats, or
- Ear muffs attached to head band.

Heat Stress Management Program

Our policy is to provide as safe a workplace as possible for our employees and all employees are expected to cooperate as a condition of employment. All employees will be trained on the recognition and prevention of heat related illnesses using the Heat Stress Program.

Emergency Procedures:

In the event of a **heat related incident, medical emergency or personal injury**, notify _____ or your supervisor, or call 911 as soon as possible. First aid and emergency cooling will be provided until emergency medical assistance arrives. If the person can be moved, carry by stretcher, or walk the individual to the break area to administer first aid or emergency cooling. If the injuries do not allow for movement, then give first aid or emergency cooling at that location.

Company Policy:

1. Managers, supervisors, and employees are responsible for implementing this policy.
2. All employees will be trained in safe working practices and heat illness prevention.
3. Cool potable water is available at the service truck. Employees are encouraged to drink water and stay away from caffeinated drinks.
4. Employees are encouraged to take breaks in the a shaded area or in other cool areas.
5. Employees are allowed to self-relieve themselves as needed for water breaks.
6. Supervisors and employees are instructed to watch out for each other. Training is provided to supervisors and employees on heat related illnesses.
7. For new employees or employees not naturally acclimatized, a lighter workload and longer rest periods will be allowed for the first 3-5 days of work. Natural acclimatization will be determined by previous similar work experiences and weather temperature and humidity during those previous work experiences.
8. On days when the temperature exceeds 90° and relative humidity exceeds 40% and work demand requires moderate to heavy work, employees are encouraged to drink 5 to 7 ounces of water every 20 minutes while working in these conditions.

After you have read and fully understand the Safety Rules, please sign and date.

EMPLOYEE SIGNATURE

DATE

Annual Heat Stress Training

Background: In the wood product industries most work is performed outside or in a facility that can not be air-conditioned. The high temperatures are accompanied with high humidity levels during the summer months. When these conditions exist, employees are more likely to encounter heat-related illnesses.

What must an employee know: As a supervisor or employee, you should know how to recognize a victim of heat-related illness. Understanding the signs of heat-related illnesses could protect you and others from heat stroke. Employees must watch each other and familiarize themselves with the symptoms of heat illnesses.

Some symptoms to watch for:

- Red flushed skin
- Weakness
- Dizziness
- Nausea
- Seizures
- Headache
- Rapid pulse
- Unconsciousness
- An internal body temperature of 106-degrees or higher

High temperatures and humidity stress the body's ability to cool itself, and heat illness becomes a special concern during hot weather. There are three major forms of heat illnesses: **heat cramps**, **heat exhaustion**, and **heat stroke**, with heat stroke being a life threatening condition.

- **Heat Cramps** - Heat cramps are muscle spasms which usually affect the arms, legs, or stomach. Frequently they don't occur until sometime later after work, at night, or when relaxing. Heat cramps are caused by heavy sweating, especially when water is replaced by drinking, but not salt or potassium. Although heat cramps can be quite painful, they usually don't result in permanent damage. To prevent them, drink electrolyte solutions such as Gatorade during the day and try eating more fruits like bananas.
- **Heat Exhaustion** - Heat exhaustion is more serious than heat cramps. It occurs when the body's internal air-conditioning system is overworked, but hasn't completely shut down. In heat exhaustion, the surface blood vessels and capillaries which originally enlarged to cool the blood collapse from loss of body fluids and necessary minerals. This happens when you don't drink enough fluids to replace what you're sweating away.

The symptoms of heat exhaustion include: headache, heavy sweating, intense thirst, dizziness, fatigue, loss of coordination, nausea, impaired judgment, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, cool moist skin, weak and rapid pulse (120-200), and low to normal blood pressure.

- **Heat Stroke** - Heat stroke is a life threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the victim's body temperature rises to deadly levels. A heat stroke victim may first suffer heat cramps and/or the heat exhaustion before progressing into the heat stroke stage, but this is not always the case. It should be noted that, on the job, heat stroke is sometimes mistaken for heart attack. It is therefore very important to be able to recognize the signs and symptoms of heat stroke - and to check for them anytime an employee collapses while working in a hot environment.

The early symptoms of heat stroke include a high body temperature (103 degrees F); a distinct absence of sweating (usually); hot red or flushed dry skin; rapid pulse; difficulty breathing; constricted pupils; any/all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, or confusion, but more severe; bizarre behavior; and high blood pressure. Advance symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108° F.

First Aid Actions: evaluate the symptoms and follow these actions:

- **Heat exhaustion:** Take the employee to the break room near the well for emergency cooling or CPR/first aid treatment. Have them lie down with their feet slightly elevated. Loosen their clothing, apply cool, wet cloths or fan them. Have them drink water or electrolyte drinks. Try to cool them down, and have them checked by medical personnel. Victims of heat exhaustion should avoid strenuous activity for at least a day, and they should continue to drink water to replace lost body fluids.
- **Heat stroke:** Call 911 and get an ambulance on the way as soon as possible. It is vital to lower a heat stroke victim's body temperature. Seconds count. Pour water on them, fan them, or apply cold packs.

What an employee can do: Employees can take other preventive measures to combat the heat. Know and react to symptoms of heat related health problems. Learn and use the following:

Smart Safety Rules.

- Drink plenty of fluids throughout the day.
- Don't drink alcohol or drinks with caffeine
- Don't eat heavy meals before working in the heat. Eat light. The more calories you take in, the more body heat you produce.
- Don't wear dark, tight fitting clothes
- Cover as much of your body as possible.
- Choose the proper type and amount of clothing. Cotton allows skin to breathe and absorbs sweat.
- Wide-brimmed hats protect from direct sunlight.

Don't depend on thirst to signal when and how much to drink. Instead, try to drink 5 to 7 ounces of fluids every 15 to 20 minutes.

Job Safety and Health and Associated Posters

POSTER	ID NUMBER	CONTACT
OSHA 300	NONE	http://www.nclabor.com/pubs.htm#Forms
State OSH Poster Requirements: - Safety and Health on the Job - Wage and Hour Act - Workers' Compensation Notice - Unemployment Insurance	NONE	ETTA N.C. Dept. of Labor 1101 Mail Service Center Raleigh, NC 27699-1101 Phone: (919) 807-2875
Equal Employment Opportunity (Federal)	O-383-798	EEOC 1309 Annapolis Drive Raleigh, NC 27608-2129
Minimum Wage Standards Polygraph Protection Act Family Leave Act	WH-1462	U.S. Department of Labor Wage and Hour Division 4407 Bland Rd, Suite 260 Raleigh, NC 27609 (919) 790-2741
Noise Exposure	1910.95	E.A.R. Corporation 5457 W. 79 th Street Indianapolis, IN 26267-0940 Phone: (317) 692-6666 (800) 678-4163

These posters are displayed in the following locations for all employees to see:

Safe Behavior Observations

Safe behavior observations are simple notes on how an employee is observed working. Work behavior is the key to eliminating accidents because it involves all aspects of equipment, job site terrain, weather, and human behavior and decisions. Potential hazards should be identified for major job activities using supervisor and crew input. Write in how to avoid these hazards on the forms. Later, observations should be made by a supervisor or another employee and the results shared with the employee observed. Points of interest should also be shared at crew safety meetings.

The following Safe Behavior Observation forms are suggested for the following jobs or work sites:

- Chain saw operation (example attached)
- Shop area
- Skidder operation
- Loader operation and deck area
- Feller-buncher operation
- Haul truck operation
- Crawler tractor operation
- Chipper operation

Safe Behavior Observations

Job: Chain Saw Operation (EXAMPLE)

Behavior

Inspect chain saw before use for proper chain tension, good repair, loose bolts and screws, levels of fuel and chain lubricant, filter condition and that all safety features work. Wear necessary personal protective gear. Start saw from a stable surface clear of debris and combustible material. Position body properly and pull starter rope after setting chain brake, turning on switch, and positioning choke. Once started, release trigger and be sure chain does not move in idle. Never carry saw unless chain brake is on or engine off. Keep blade pointed to the rear when transporting. Inspect work area for hazards and plan an escape route before cutting. Never cut above shoulder level. Keep chain teeth sharp. Control the saw at all times with the thumb wrap around the top saw handle bar. Use open-faced cuts and back cuts to directionally fell trees. Limbing and topping must be done to prevent turning or rolling of logs. Take rest breaks when necessary.

OBSERVATIONS (CHECK):	SAFE:	UNSAFE:	COMMENTS:
1. Chainsaw inspection	_____	_____	_____
2. Saw started properly	_____	_____	_____
3. Inspection of starting site and cutting area	_____	_____	_____
4. Proper carrying technique	_____	_____	_____
5. Inspection of work area	_____	_____	_____
6. Escape route planned	_____	_____	_____
7. Saw never used above shoulder level	_____	_____	_____
8. Saw in control at all times	_____	_____	_____
9. Proper open-faced cuts and back cuts	_____	_____	_____
10. Logs stable when limbing and topping	_____	_____	_____
11. Adequate work breaks taken	_____	_____	_____

Total Observations Safe: _____

Total Observations Unsafe: _____

% Safe Observations: _____

By: _____ Date: _____

Safe Behavior Observations

(Use as master—may be photocopied)

Job:

Behavior:

	OBSERVATIONS (CHECK:)	SAFE:	UNSAFE:	COMMENTS:
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				

Total Observations Safe:

Total Observations Unsafe:

% Safe Observations:

By:

 Date:

Information and Phone Numbers

N.C. Forestry Association
Raleigh, NC

(919) 843-3943 or 1-800-231-7723
Fax: (919) 832-6288
Email: trainingrequest@ncforestry.org

Forestry Mutual Insurance Co.
Raleigh, NC

(919) 755-5790 or 1-800-849-7788

N.C. Association of Professional
Loggers
Raleigh, NC

(919) 271-9050
contact@ncloggers.com

N.C. Division of Forest Resources
Raleigh, NC

(919) 733-2162

NCDOL (General Information)
Raleigh, NC

1-800-625-2267

NCDOL (Education, Training &
Technical Assistance)
Raleigh, NC

919-807-2875

NCDOL (Courtesy Consultation
Inspections)
Raleigh, NC

(919) 807-2899

N.C. Emergency Management

1-800-858-0368

Your Company's Insurance Agent
Other Important Numbers

Local Hospital Information

Directions and phone numbers for local hospitals for:

Rescue squad phone number(s):

Area _____ Phone _____

Area _____ Phone _____

Area _____ Phone _____

Hospital(s):

City/County _____ Phone _____

City/County _____ Phone _____

City/County _____ Phone _____

Sketch of nearby roads leading to hospitals (new for each logging site):

Nearest helicopter landing area if evacuation is required:

List landmarks visible to helicopter pilot:

Ground positioning system (GPS) coordinates:

Latitude: _____ Longitude: _____

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NCDOL Logging Operations Interpretive Guide

The N.C. Forestry Association (NCFA), Forestry Mutual Insurance Company (FMIC), N.C. Association of Professional Loggers (NCAPL), and the N.C. Department of Labor, Occupational Safety and Health Division cooperated to provide a clear and concise interpretation of current federal logging operation standards. This guide is used by all persons, agencies, and companies seeking to comply with the federal standards as applied to N.C. logging conditions and common practices.

The NCFA, NCAPL and FMIC are committed to work closely with public agencies to promote a full and complete understanding of regulations that impact logging operations. One goal is to continually improve the educational and training materials that are provided to loggers and NCDOL personnel alike. This interpretative guide is an effort to provide some clarification to promote a better understanding of the most recently adopted safety and health standards for the logging industry. Persons using this interpretive guide who have suggestions for improvement or clarification are asked to contact the Education, Training and Technical Assistance Bureau standards section at 919-807-2878.

The following interpretive guide is organized in two columns with the federal logging standard on the left and the NCDOL interpretation on the right. Readers should be familiar with first the federal standard, and then how the N.C. interpretation is used. **Disclaimer: The federal logging standard within this document may not be all inclusive.**

(b) SCOPE and APPLICATION: (1) Standard establishes safety practices, means, methods, and operations for all types of logging regardless of end use of wood—pulpwood and timber harvesting, sawlogs, veneer bolts, poles, pilings and other forest products. Standard does not cover the construction or use of cable yarding system.	
(2) Standard applies to all logging operations as defined by this section (3) Hazards and working conditions not specifically addressed by this section are covered by other applicable sections of Part 1910.	N.C.G.S. 95-129 (1) General Duty Clause—may be applicable to serious conditions not covered by any of the specific standards of Part 1910.
(c) DEFINITIONS. Placed at the end of this table due to formatting.	
(d) GENERAL REQUIREMENTS. (1) Personal Protective Equipment (i) The employer shall assure that personal protective equipment, including any such equipment provided by an employee, is maintained in a serviceable condition.	If PPE is worn/removed from the site by the employee, the employee could be charged with the cost of the equipment. [Ref. 1910.132 (h)] “Serviceable condition” shall mean the equipment is capable of providing at least the personal protection designed by the manufacturer as determined by visual inspections and user reports.
(ii) The employer shall assure that personal protective equipment is inspected before initial use during each work shift. Defects or damage shall be repaired, or the unserviceable equipment shall be replaced before work is commenced.	“Repaired” shall mean restoring the equipment to such condition that will afford at least its original protection for the user.
(iii) The employer shall provide, at no cost to the employee, and assure that each employee handling wire rope wears hand protection which provides adequate protection from puncture wounds, cuts and lacerations. [60 FR 47035, Sept. 8, 1995]	Adopted the requirement for hand protection. Leather or heavy duty puncture resistant gloves shall be worn by employees who handle wire rope.
(iv) The employer shall provide at no cost to the employee, and assure that each employee who operates a chain saw wears leg protection constructed with cut resistant material such as ballistic nylon or other leg protection the employer demonstrates provides equivalent protection. 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 29 CFR 1910.68. [Standard amended at 60 FR 47035, Sept. 8, 1995]	Leg protectors that bear certification by a recognized testing facility are suitable. The equipment must be maintained and used according to the instructions of the manufacturer. Cuts or tears in the protective material shall mean the protector is no longer in serviceable condition. Superficial cuts to the outer fabric shall be repaired before returned to use, to prevent debris from entering the cut.

(v) The employer shall assure that each employee wears foot protection, such as heavy-duty boots that are waterproof or water repellant, 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 which will protect the employee against contact with a running chain saw. Sharp, calk-soled boots or other slip resistant type boots may be worn 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 paragraph is met. [Standard amended at 60 FR 47035, Sept. 8, 1995]	Employees other than chain saw operators shall wear heavy-duty safety boots that are water-repellent, cover and provide support at the ankle. All chain saw operators shall wear heavy-duty boots that are water-repellent, cover, and provide support at the ankle, and made with materials that the manufacturer declares to be cut resistant. Reference 1910.136(a) Each affected employee shall use protective footwear when working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where such employee's feet are exposed to electrical hazards. ANSI Z41-1991—Footwear purchased after July 5, 1994 or Z41-1-1967—Footwear purchased before July 4, 1994. NCDOL will consider safety footwear which is labeled as meeting the requirements of the new ASTM standards as equivalent to the ANSI Z41.1 standards.[see OSH SN 70].
(vi) The employer shall provide, at no cost to the employee, and assure that each employee who works in an area where there is potential for head injury from falling or flying objects wears head protection meeting the requirements of Subpart I of Part 1910.	Equipment must conform to ANSI 89.1-1986. The ANSI decal will be placed inside the hat.
(vii) The employer shall provide, at no cost to the employee, and assure that each employee wears the following: (A) Eye protection meeting the requirements of Subpart I of Part 1910 where there is potential for eye injury due to falling or flying objects; and (B) Face protection meeting the requirements of Subpart I of Part 1910 where there is potential for facial injury such as, but not limited to, operating a chipper. Logger-type mesh screens may be worn by employees performing chain saw operations and yarding. (Note to paragraph (d) (I) (vii): The employee does not have to wear a separate eye protection device where face protection covering both the eyes and face is worn.) [Standard amended at 60 FR 47035, Sept. 8, 1995]	The employer shall provide, at no cost to the employee, safety glasses and facial screen for each chain saw operator unless the employer can demonstrate a greater hazard. Safety glasses must meet ANSI Z87.1-1989, or be equally effective. The ANSI number will be found on the inside of one of the stems of the safety glasses.
(2) First-aid kits. (i) The employer shall provide first-aid kits at each worksite where trees are being cut (e.g., felling, bucking, limbing) at each active landing, and on each employee transport vehicle. [Standard amended at 60 FR 47035, Sept. 8, 1995]	Refer to definition of "worksite". Worksite—Where trees are being cut; that includes limbing, bucking, trimming and felling.
(ii) At a minimum, each first-aid kit shall contain the items listed in Appendix A at all times.	Fellers/stumpers and other chain saw operators, working away from the landing shall be issued and carry a compact first-aid kit that contains supplies to control bleeding and infection. Other first-aid kits must comply with Appendix A of the standard.

(iii) The employer also may have the number and content of first-aid kits reviewed and approved annually by a health care provider. [Standard amended at 60 FR 47035, Sept. 8, 1995]	Compact first-aid kits shall include at a minimum: wound compress, latex gloves, assorted band-aids, antiseptic wipes. Items should be packaged to remain clean and dry.
(iv) The employer shall maintain the contents of each first-aid kit in a serviceable manner.	Ensure that kits are adequately supplied and replenished as necessary; assure that contents are clean and sterile.
(3) Seat belts. (i) through (vi) requires the employer to assure: seat belt be provided for each vehicle or machine operator; each employee uses the seat belt while the equipment is being operated; employee(s) securely and tightly fasten the seat belt; each machine seat belt meets the requirements of the Society of Automotive Engineers Standard SAE J386, June 1995; and seat belts are maintained in serviceable condition.	Commercially available seat belts properly installed according to manufacturer's recommendations.
(4)—Fire extinguishers. The employer shall provide and maintain portable fire extinguishers on each machine and vehicle in accordance with the requirements of Subpart L of Part 1910.	Portable chemical fire extinguishers shall be at least 2A: 10 BC. Operable pressurized water extinguishers are considered optional on equipment.
(5) Environmental conditions. All work shall terminate and each employee shall move 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, and darkness, create a hazard for the employee in the performance of the job. [Standard amended at 60 FR 47035, Sept. 8, 1995]	The employer shall provide flood lighting equipment for the work area during night operations.
(6) Work areas. (i) Employees shall be spaced and the duties of each employee organized so the actions of one employee not create a hazard for any other employee.	
(ii) The distance between adjacent occupied work areas shall be at least two tree lengths of the trees being felled; on any slope where rolling or sliding trees or logs is reasonably foreseeable a distance of greater than two tree lengths shall be maintained.	
(iii) Each employee performing a logging operation at a logging work site shall work in a position or location that is within visual or audible contact with another employee. [Standard amended at 60 FR 47035, Sept. 8, 1995]	
(iv) The employer shall account for each employee at the end of each work shift.	
(7) Signaling and signal equipment. (i) 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 communication between employees.	The employer shall assure a means of continuous communication between employees. Each employee shall remain in visual or audible contact at all times.
(ii) Engine noise, such as from a chain saw, is not an acceptable means of signaling. Other locally and regionally recognized signals may be used.	Provided local and regional recognized signals are as effective.
(iii) Only a designated person shall give signals, except in an emergency.	"Designated person" is one who has the necessary knowledge, training, and experience to perform specific job task.

(ii) The employer shall notify the power company immediately if a felled tree makes contact with any power line. Employees shall remain clear of the area until the power company advises that there are no electrical hazards.	
(8) Overhead electric lines. (i) Logging operations near overhead electric lines shall be done in accordance with the requirements of 26 CFR 1910.333(c)(3).	*Recommended a 100 ft. buffer be maintained during logging operation near power lines. 100 ft. buffer will be measured from furthest reach of implements or felled timber. A safety log plan shall be provided within the buffer zone. Any vehicle or machine which elevates its parts or materials near energized overhead lines shall be operated so that a clearance of 10 feet (305 cm) is maintained. If voltage is more than 50 KV, clearance shall be increased 4 inches (10 cm) for every 10KV over that voltage.
The employer shall notify the power company immediately if a felled tree makes contact with any power line. Employees shall remain clear of the area until the power company advises that there are no electrical hazards.	
(9) Flammable and combustible liquids. (i) Flammable and combustible liquids shall be stored, handled, transported and used in accordance with the requirements of Subpart H of Part 1910.	Plastic safety containers of up to five gallons capacity may be used if approved by UL, FM, or other recognized testing facility and the container is marked for contents. [NCDOL OSH SN 18]
(ii) Flammable and combustible liquids shall not be transported in the driver compartment or in any passenger occupied area of a machine or vehicle.	
(iii) Each machine, vehicle and portable powered tool shall be shut off during fueling. Diesel powered machines and vehicles may be fueled while they are at idle, provided that continued operation is intended and that the employer follows safe fueling and operating procedures. [Standard amended at 60 FR 47035, Sept. 8, 1995]	
(iv) Flammable and combustible liquids, including chain-saw and diesel fuel may be used to start a fire, provided the employer assures that in the particular situation its use does not create a hazard for an employee. [Standard amended at 60 FR 47035, Sept. 8, 1995]	Combustible liquids such as diesel fuel and kerosene may be used to start a fire if it does not create a hazard for the employee, or an EPA hazard.
(10) Explosives and blasting agents. (i) Explosives and blasting agents shall be stored, handled, transported, and used in accordance with the requirements of Subpart H of Part 1910. (ii) Only a designated person shall handle or use explosives or blasting agents. (iii) Explosives and blasting agents shall not be transported in the driver compartment or in any passenger occupied area of a machine or vehicle.	
(e) Hand and Portable Powered Tools. (1) General Requirements. (i) Employer shall assure that each hand and portable powered tool, including any provided by an employee, is maintained in serviceable condition.	

(ii) Employer shall assure that each tool, including any tool provided by an employee, is inspected prior to initial use during each work shift. At a minimum, the inspection shall include the following: (A) Handles and guards, to assure that they are 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 in place and operable; (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; and (H) All other safety devices, to assure that they are in place and function properly.	Nothing in this rule prohibits the employer from allowing the tool user or operator from performing the work shift inspection provided that such inspection and the required content of the inspection are accomplished in the manner and time frame specified.
(iii) The employer shall assure that each tool is used only for purposes for which it has been designed.	
(iv) When the head of any shock, impact-driven or driving tool begins to chip, it shall be repaired or removed from service.	
(v) The cutting edge of each tool shall be sharpened in accordance with manufacturer's specifications whenever it becomes dull during the workshift.	
(vi) Each tool shall be stored in the provided location when not being used at a work site.	
(vii) Racks, boxes, holsters or other means shall be provided, arranged and used for the transportation of tools so that a hazard is not created for any vehicle operator or passenger.	
(2) Chain saws. (i) Each chain saw placed into initial service after the effective date of this section shall be equipped with a chain brake and shall otherwise meet the requirements of the ANSI B173.1-1991 "Safety Requirements for Gasoline—Powered Chain Saws." Each chain saw placed into service before the effective date of this section shall be equipped with a protective device that minimizes chain saw kickback. No chain saw kickback device shall be removed or otherwise disabled.	Effective date was April 1, 1995, in North Carolina. Devices that shall be used to reduce kickback action include: chain brake, reduced kickback bars and chains. Chain saws must meet ANSI standards with chain brake, throttle, and chain retainer device.
(ii) Each gasoline powered chain saw shall be equipped with a continuous pressure throttle control system which will stop the chain when pressure on the throttle is released.	
(iii) The chain saw shall be operated and adjusted in accordance with the manufacturer's instructions.	
(iv) The chain saw shall be fueled at least 10 feet (3 m) from any open flame or other source of ignition. [Standard amended at 60 FR 47036, Sept. 8, 1995]	
(v) The chain saw shall be started at least 10 feet (3 m) from the fueling area.	
(vi) The chain saw shall be started on the ground or where otherwise firmly supported. Drop starting a chain saw is prohibited.	
(vii) The chain saw shall be started with the chain brake engaged.	
(viii) The chain saw shall be held with the thumbs and fingers of both hands encircling the handles during operation unless the employer demonstrates that a greater hazard is posed by keeping both hands on the chain saw in that particular situation.	

(ix) Chain saw operators shall be certain of footing before starting to cut. The chain saw shall not be used in a position or at a distance that could cause the operator to become off balance, to have insecure footing, or to relinquish a firm grip on the saw.	
(x) Prior to felling any tree, the chain saw operator shall clear away brush or other potential obstacles which might interfere with cutting the tree or using the retreat path.	
(xi) Chain saw shall not be used to cut directly overhead.	Overhead shall be defined as operation conducted above shoulder height.
(xii) The chain saw shall be carried in a manner that will prevent operator contact with the cutting chain and muffler.	
(xiii) The chain saw shall be shut off or the throttle released before the feller starts his retreat.	
(xiv) Chain saw shall be shut down or the chain brake shall be engaged whenever the saw is carried further than 50 feet (15.2 m). The chain saw shall be shut down or the chain brake engaged when the chain saw is carried less than 50 feet if conditions such as terrain, underbrush and slippery surfaces, may create a hazard.	
(f) Machines.	
(1) General Requirements.	
(i) Employer shall assure that each machine, including any machine provided by an employee, is maintained in serviceable condition.	Passenger vehicles used principally for highway use and transport of people would not be a "machine" as defined in this section. "Machine" means stationary or mobile equipment having a self-contained power plant, which is operated off-road and used in the processing or movement of material.
(ii) The employer shall assure that each machine, including any machine provided by an employee, is inspected before initial use during each workshift. Defects or damage shall be repaired or the unserviceable machine shall be replaced before work is commenced.	
(iii) Employer shall assure that operating and maintenance instructions are available on the machine or in the area where the machine is being operated. Each machine operator and maintenance employee shall comply with the operating and maintenance instructions.	
(2) Machine operations.	
(i) The machine shall be started and operated only by a designated person.	
(ii) Stationary logging machines and their components shall be anchored or otherwise stabilized to prevent movement during operation.	
(iii) The rated capacity of machine(s) shall not be exceeded.	
(iv) To maintain stability, the machine must be operated within the limitations imposed by the manufacturer as described in the operating and maintenance instructions for that machine.	
(v) Before starting or moving any machine, the operator shall determine that no employee is in the path of the machine.	
(vi) The machine shall be operated only from the operator's station or as otherwise recommended by the manufacturer.	
(vii) The machine shall be operated at such a distance from employees and other machines such that operation will not create a hazard for an employee.	

(viii) No employee other than the operator shall ride on any mobile machine unless seating, seat belts, and other protection equivalent to that provided for the operator are provided.	
(ix) No employee shall ride on any load.	
(x) Before the operator leaves the operator's station of a machine, it shall be secured as follows: (A) The parking brake or brake locks shall be applied. (B) The transmission shall be placed in the manufacturer's specified park position; and (C) Each moving element such as, but not limited to blades, buckets, saws and shears, shall be lowered to the ground or otherwise secured.	Standard also includes grapples which shall be lowered.
(xi) If a hydraulic or pneumatic storage device can move the moving elements such as, but not limited to, blades, buckets, saws and shears, after the machine is shut down, the pressure or stored energy from the element shall be discharged as specified by the manufacturer.	Shut down and bleeding of pressure and stored energy shall be in accordance with manufacturer's recommendations.
(xii) The rated capacity of any vehicle transporting a machine shall not be exceeded.	
(xiii) The machine shall be loaded, secured and unloaded so that it will not create a hazard for any employee.	
(3) Protective structures (i) Each tractor, skidder, swing yarder, log stacker, log loader and mechanical felling device such as tree shears or feller-buncher placed into initial service after February 9, 1995, shall be equipped with falling object protective structure (FOPS) and/or rollover protective structure (ROPS). The employer shall replace FOPS or ROPS which have been removed from any machine. Exception: This requirement does not apply to machines which are capable of 360 degree rotation. [Amended at 60 FR 47036, Sept. 8, 1995]	
(ii) (A) ROPS shall be tested, installed, and maintained in serviceable condition. (B) Each machine manufacturer after August 1, 1996, shall have ROPS tested, installed, and maintained in accordance with Society of Automotive Engineers SAE J1040, April 1988, "Performance Criteria for Rollover Protective Structure (ROPS) for Construction, Earthmoving, Forestry, and Mining Machines." [Amended at 60 FR 47036, Sept. 8, 1995]	
(iii) FOPS shall be installed, tested and maintained in with the Society of Automotive Engineers SAEJ231, January 1981, "Minimum Performance Criteria for Falling Object Protective Structures (FOPS)."	
(iv) ROPS and FOPS shall meet the requirements of the Society of Automotive Engineers SAE J397, April 1988, "Deflection Limiting Volume—ROPS/FOPS Laboratory Evaluation."	
(v) Each protective structure shall be of size that does not impede the operator's normal movement.	
(vi) The overhead covering of each cab shall be of solid material and shall extend over the entire canopy.	Solid material does include Lexan.

(vii) Each machine manufactured after August 1, 1996, shall have a cab that is fully enclosed with mesh material with openings no greater than 2 inches (5.08 cm) at its least dimension. The cab may be enclosed with other material(s) where the employer demonstrates such material provides equivalent protection and visibility. Exception: Equivalent visibility is not required for the lower portion of the cab where there are control panels or similar obstructions in the cab, or where visibility is not necessary for safe operation of the machine. [Amended at 60 FR 47036, Sept. 8, 1995]	
(viii) Each machine manufactured on or before August 1, 1996, shall have a cab which meets the requirements specified in paragraph (f)(3)(vii) or a protective canopy for the operator which meets the following requirements. (A) The protective canopy shall be constructed to protect the operator from injury due to falling trees, limbs, saplings or branches which might enter the compartment side areas and from snapping winch lines or other objects; (B) The lower portion of the cab shall be fully enclosed with solid material, except at entrances, to prevent the operator from being injured from obstacles entering the cab; (C) The upper rear portion of the cab shall be fully enclosed with open mesh material with openings of such size as to reject the entrance of an object larger than 2 inches in diameter. It shall provide maximum rearward visibility; and (D) Open mesh shall be extended forward as far as possible from the rear corners of the cab sides so as to give the maximum protection against obstacles, branches, etc., entering the cab.	Doors of open mesh metal, or equivalent material, shall be installed on the cab of machines to prevent saplings, branches, broken poles, etc., from entering entrances of the cab of mobile machines on the site.
(ix) The enclosure of the upper portion of each cab shall allow maximum visibility.	
(x) When transparent material is used to enclose the upper portion of the cab, it shall be made of safety glass or other material that the employer demonstrates provides equivalent protection and visibility.	
(xi) Transparent material shall be kept clean to assure operator visibility.	
(xii) Transparent material that may create a hazard for the operator, such as but not limited to, cracked, broken or scratched safety glass, shall be replaced.	
(xiii) Deflectors shall be installed in front of each cab to deflect whipping saplings and branches. Deflectors shall be located so as not to impede visibility and access to the cab.	Does not include logging equipment with enclosed canopy.
(xiv) The height of each cab entrance shall be at least 52 inches (1.3 m) from the floor of the cab.	
(xv) Each machine operated near cable yarding operations shall be equipped with sheds or roofs of sufficient strength to provide protection from breaking lines.	
(4) Overhead guards. Each forklift shall be equipped with an overhead guard meeting the requirements of the American Society of Mechanical Engineers, ASME B56.6-1992 (with addenda), "Safety Standard for Rough Terrain Forklift Trucks."	
(5) Machine access. (i) Machine access systems meeting the specifications of the Society of Automotive Engineers, SAEJ185, June 1988, "Recommended Practice for Access Systems for Off-Road Machines," shall be provided for each machine where the operator must climb onto the machine to enter the cab or to perform maintenance.	

(ii) Each machine cab shall have a second means of egress.	
(iii) Walking and working surfaces of each machine and machine work station shall have a slip-resistant surface to assure safe footing.	
(iv) The walking and working surface of each machine shall be kept free of waste, debris and any other material which might result in fire, slipping, or falling.	
(6) Exhaust Systems.	
(i) The exhaust pipes on each machine shall be located so exhaust gases are directed away from the operator.	
(ii) Exhaust pipes on each machine shall be mounted or guarded to protect each employee from accidental contact.	
(iii) The exhaust pipes shall be equipped with spark arresters. Engines equipped with turbochargers do not require spark arresters.	
(iv) Each machine muffler provided by the manufacturer, or their equivalent, shall be in place at all times the machine is in operation.	
(7) Brakes.	
(i) Service brakes shall be sufficient to stop and hold each machine and its rated load capacity on the slopes over which it is being operated.	
(ii) Each machine placed into initial service after September 8, 1995, shall also be equipped with: backup or secondary brakes that are capable of stopping the machine regardless of the direction of travel or whether the engine is running; and parking brakes that are capable of continuously holding a stopped machine stationary.	Applicable to machines placed into initial service after September 8, 1995. Older machines are permitted to remain in service provided the service braking system and, if available, the emergency brake system are inspected and maintained at the designed level of effectiveness.
(8) Guarding.	
(i) Each machine shall be equipped with guarding to protect employees from exposed moving elements, such as but not limited to, shafts, pulleys, belts on conveyors, and gears, in accordance with the requirements of subpart O of Part 1910.	Guarding satisfies the requirements of subpart O when it is in the form of specially constructed barrier or when the structure of the machine itself prevents employee contact with the moving elements of the machine.
(ii) 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 in accordance with the requirements of subpart O of Part 1910.	
(iii) The guarding on each machine shall be in place at all times the machine is in operation.	
(g) Vehicles.	
(1) The employer shall assure that each vehicle used to perform any logging operation is maintained in serviceable condition.	Applicable only to vehicles that the employer owns, rents, or leases.
(2) The employer shall assure that each vehicle used to perform any logging operation is inspected before initial use during each work shift. Defects or damage shall be repaired or the unserviceable vehicle shall be replaced before work is commenced.	Applicable only to vehicles that the employer owns, rents, or leases.
(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.	Applicable only to vehicles that the employer owns, rents, or leases.

(4) The employer shall assure that each vehicle operator has a valid operator's license for the class of vehicle being operated.	Tractor trailers, trucks, and other vehicles and equipment used in the transportation of logs or similar products will be included in the on-site inspections process. DOT CDL (Commercial Drivers License) mandates a pre-trip inspection, records of these pre-trip inspections will be inspected to ensure operators compliance with load and vehicle pre-trip safety inspection criteria. A referral to DOT may be necessary.
(5) Mounting steps and handholds shall be provided for each vehicle wherever it is 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 requirements of (f)(2)(iii), (f)(2)(v), (f)(2)(vii), (f)(2)(x), (f)(2)(xiii), and (f)(7) of this section shall also apply to each vehicle used to transport any employee off public roads or to perform any logging operation, including any vehicle provided by an employee.	Applicable to employee provided vehicles only when the use is at the request of the employer and the use is during the usual work shift at a logging site or when the operation is moving to a different location.
(h) Tree Harvesting.	
(1) General Requirements.	
(i) Trees shall not be felled in a manner that will create a hazard for an employee, such as but not limited to, striking a rope, cable, power line, or machine.	
(ii) The immediate supervisor shall be consulted when unfamiliar or unusual hazardous conditions necessitate the supervisor's approval before cutting is commenced.	
(iii) While manual felling is in progress, no yarding machine shall be operated within two tree lengths of trees being manually felled. Exception: This provision does not apply to yarding machines performing tree pulling operations.	Tree pulling means a coordinated, planned effort involving guide cables, manual feller, and cable tensioning equipment. A safety plan must be in place that all participating employees understand and follow.
(iv) No employee shall approach a feller closer than two tree lengths of the trees being felled until the feller has acknowledged that it is safe to do so, unless the employer demonstrates that a team of employees is necessary to manually fell a particular tree.	
(v) No employee shall approach a mechanical felling operation closer than two tree lengths of the trees being felled until the machine operator has acknowledged that it is safe to do so.	
(vi) 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 no work shall be conducted within two tree lengths of the danger tree unless the employer demonstrates that a shorter distance will not create a hazard for an employee.	
(vii) Each danger tree shall be carefully checked for signs of loose bark, broken branches and limbs or other damage before they are felled or removed. Accessible loose bark and other damages that may create a hazard for an employee shall be removed or held in place before felling or removing the tree.	
(viii) Felling on any slope where rolling or sliding of trees or logs is reasonably foreseeable shall be done uphill from, or on the same level as, previously felled trees.	

(ix) Domino felling of trees is prohibited.	A single tree with another pusher tree is also prohibited.
(2) Manual felling (i) Before felling is started, the feller shall plan and clear a retreat path. The retreat path shall extend diagonally away from the expected felling line unless the employer demonstrates that such a retreat path poses a greater hazard than an alternate path. Once the backcut has been made the feller shall immediately move a safe distance away from the tree on the retreat path.	
(ii) Before each tree is felled, conditions such as but not limited to, snow and ice accumulation, the wind, the lean of the tree, dead limbs, and the location of other trees, shall be evaluated by the feller and precautions taken so a hazard is not created for an employee.	
(iii) Each tree shall be checked for accumulation of snow and ice. 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.	
(iv) When a spring pole or other tree under stress is cut, no employee other than the feller shall be closer than two tree lengths when the stress is released.	
(v) An undercut shall be made in each tree being felled unless the employer demonstrates that felling the particular tree without an undercut will not create a hazard for an employee. The undercut shall be of a size so the tree will not split and will fall in the intended direction.	
(vi) A backcut shall be made in each tree being felled. The backcut shall sufficient hinge to hold the tree to the stump during most of its fall so that the hinge is able to guide the tree's fall in the intended direction.	Swing cutting is not allowed.
(vii) The backcut shall be above the level of the horizontal face cut in order to provide an adequate platform to prevent kickback. Exception: The backcut may be at or below the horizontal face cut in tree pulling operations.	Placement of backcut, face cut and undercut will be accomplished to guide the direction of the felling tree.
(3) Bucking and limbing. (i) Bucking and limbing on any slope where rolling or sliding of trees or log is reasonably foreseeable shall be done on the uphill side of each tree.	
(ii) Before bucking or limbing wind-thrown trees, precautions shall be taken to prevent the root wad, butt or logs from striking an employee. These precautions include, but are not limited to, chocking or moving the tree to a stable position.	
(4) Chipping. (in woods locations) (i) Chipper access covers or doors shall not be opened until the drum or disc is at a complete stop.	
(ii) Infeed and discharge ports shall be guarded to prevent contact with the discs, knives, or blower blades.	
(iii) The chipper shall be shut down and locked out in accordance with the requirements of 1910.147 when an employee performs any servicing or maintenance.	29 CFR 1910.147 states the specific requirements for shut down and lock out of equipment.
(iv) Detached trailer chippers shall be chocked during usage on any slope where rolling or sliding of the chipper is reasonably foreseeable.	
(5) Yarding. (i) No log shall be moved until each employee is in the clear.	

(ii) Each choker shall be hooked and unhooked from the uphill side or end of the log, unless the employer demonstrates that it is not feasible in the particular situation to hook or unhook the choker from the uphill side. Where the choker is hooked or unhooked from the downhill side or end of the log, the log shall be securely chocked to prevent rolling, sliding or swinging.	
(iii) Each choker shall be positioned near the end of the log or tree length.	
(iv) Each machine shall be positioned during winching so the machine and winch are operated within their designed limits.	
(v) No yarding line shall 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 as it is and wait for a confirming signal before moving any line.	
(vi) No load shall exceed the rated capacity of the pallet, trailer, or other carrier.	
(vii) Towed equipment, such as but not limited to, skid pans, pallets, arches, and trailers shall be attached to each machine or vehicle in such a manner as to allow a full 90 degree turn; to prevent overrunning of the towing machine or vehicle; and to assure that the operator is always in control of the towed equipment.	
(viii) The yarding machine or vehicle, including its load, shall be operated with safe clearance from all obstructions that may create a hazard for an employee.	
(ix) Each yarded tree shall be placed in a location that does not create a hazard for an employee and an orderly manner so that the trees are stable before bucking or limbing is commenced.	
(6) Loading and unloading. (i) The transport vehicle shall be positioned to provide working clearance between the vehicle and the deck.	
(ii) Only the loading or unloading machine operator and other personnel the employer demonstrates are essential shall be in the loading or unloading work area during this operation.	
(iii) No transport vehicle operator shall remain in the cab during loading and unloading if the logs are carried or moved over the truck cab, unless the employer demonstrates that it is necessary for the operator to do so. Where the transport vehicle operator remains in the cab, the employer shall provide operator protection, such as but not limited to, reinforcement of the cab.	
(iv) Each log shall be placed on a transport vehicle in an orderly manner and tightly secured.	
(v) The load shall be positioned to prevent slippage or loss during handling and transport.	
(vi) Each stake and chock which is used to trip loads shall be so constructed that the tripping mechanism is activated on the side opposite the release of the load.	
(vii) Each tie down shall be left in place over the peak log to secure all logs until the unloading lines or other protection the employer demonstrates is equivalent has been put in place. A stake of sufficient strength to with stand the shifting or moving logs shall be considered equivalent protection provided that the logs are not loaded higher than the stake.	

(viii) 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; and (B) When the employee making the release is protected by racks, stanchions or other protection the employer demonstrates is capable of withstanding the force of the logs.	
(7) Transport. The transport vehicle operator shall assure that each tie down is tight before transporting the load. While en route, the operator shall check and tighten the tie downs whenever there is reason to believe that the tie downs have loosened or the load has shifted.	
(8) Storage. 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.	
(I) Training.	
(1) The employer shall provide training for each employee, including supervisors, at no cost to the employee.	
(2) Frequency of training shall be provided as follows: (i) As soon as possible but not later than the effective date of this section for initial training for each current and new employee. (ii) Prior to initial assignment for each new employee. (iii) Whenever the employee is assigned new work task, tools, equipment, machines or vehicles; and (iv) Whenever an employee demonstrates unsafe job performance.	
(3) Content. At a minimum, training shall consist of the following elements: (i) Safe performance of assigned work task. (ii) Safe use, operation and maintenance of tools, machines and vehicles the employee uses or operates, including emphasis on understanding and following the manufacturer's operating and maintenance instructions, warnings and precautions. (iii) Recognition of safety and health hazards associated with the employee's specific work task including the use of measures and work practices to prevent or control those hazards. (iv) Recognition, prevention and control of other safety and health hazards in the logging industry. (v) Procedures, practices and requirements of the employer's work site; and (vi) the requirements of this standard.	
(4) Training of an employee due to unsafe job performance, or assignment of new work tasks, tools, equipment, machines, or vehicles; may be limited to those elements in paragraph (I)(3) of this section which are relevant to the circumstances giving rise to the need for training.	
(5) Portability of training. (i) Each current employee who has received training in the particular elements specified in paragraph (I)(3) of this section shall not be required to be retrained in those elements. (ii) Each new employee who has received training in the particular elements specified in paragraph (I)(3) of this section	

shall not be required to be retrained in those elements prior to initial assignment. (iii) The employer shall train each current and new employee in those elements for which the employee has not received training. (iv) The employer is responsible for ensuring that each current and new employee can properly and safely perform the work tasks and operate the tools, equipment, machines, and vehicles used in their job.	
(6) Each new employee and each employee who is required to be trained as a specific (1)(2) of this section, shall work under the close supervision of a designated person until the employee demonstrates to the employer the ability to safely perform their new duties independently.	
(7) First-aid training. (i) The employer shall assure that each employee, including supervisors, receives or has received first-aid and CPR training meeting at least the requirements specified in Appendix B.	The employer shall arrange that each logging crew has at least two “designated” employees who are certified in first-aid and CPR to immediately respond and to provide emergency assistance if needed at any work site during logging operations.
(ii) The employer shall assure that each employee’s first-aid and CPR training and/or certificate of training remain current.	
(8) All training shall be conducted by a designated person.	
(9) The employer shall assure that all training required by this section is presented in a manner that the employee is able to understand. The 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) Certification of training. (i) The employer shall verify compliance with paragraph (i) of this section by preparing a written certification record. The written certification shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted prior to the employee’s hiring or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate.	
(ii) The most recent training certificate shall be maintained.	
(11) Safety and health meetings. The employer shall hold safety and health meetings as necessary and at least 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.	

(j) APPENDICES

Appendices A and B of this section are mandatory. The information contained in Appendix C of 1910.266 is non-mandatory and is not included in this booklet.

Appendix A to 1910.266—First-Aid Kits (Mandatory)

The following list sets forth the minimally acceptable number and type of first-aid supplies for first-aid kits required under paragraph (d)(2) of the logging standard. The contents of the first-aid kit listed should be adequate for small work sites, consisting of approximately two to three employees. When larger operations or multiple operations are being conducted at the same location, additional first-aid kits should be provided at the work site or additional quantities of supplies should be included in the first-aid kits:

1. Gauze pads (at least 4x4 inches).
2. Two large gauze pads (at least 8x10 inches)
3. Box adhesive bandages (band-aids)
4. One package gauze roller bandage at least 2 inches wide
5. Two triangular bandages
6. Wound cleaning agent such as sealed moistened towelettes.
7. Scissors
8. At least one blanket
9. Tweezers
10. Adhesive tape
11. Latex gloves
12. Resuscitation equipment such as resuscitation bag, airway, or pocket mask
13. Two elastic wraps
14. Splint
15. Directions for requesting emergency assistance

Appendix B to 1910.266—First-aid and CPR Training (Mandatory)

The following is deemed to be the minimal acceptable first-aid and CPR training program for employees engaged in logging activities. First-aid and CPR training shall be conducted using the conventional methods of training such as lecture, demonstration, practical exercise and examination (both written and practical). The length of training must be sufficient to assure that trainees understand the concepts of first aid and can demonstrate their ability to perform the various procedures contained in the outline below. As a minimum first-aid and CPR training shall consist of the following:

1. The definition of first-aid
2. Legal issues of applying first aid (Good Samaritan Laws)
3. Basic anatomy
4. Patient assessment and first-aid for the following:
 - a. Respiratory arrest
 - b. Cardiac arrest
 - c. Hemorrhage
 - d. Lacerations/abrasions
 - e. Amputations
 - f. Musculoskeletal injuries
 - g. Shock
 - h. Eye injuries
 - i. Burns
 - j. Loss of consciousness
 - k. Extreme temperature exposure (hypothermia/hyperthermia)
 - l. Paralysis
 - m. Poisoning

- n. Loss of mental functioning (psychosis/hallucinations, etc.)
- o. Artificial ventilation
- p. Drug overdose
- q. CPR
- r. Application of dressings and slings
- s. Treatment of strains, sprains, and fractures
- t. Immobilization of injured persons
- u. Handling and transporting injured persons
- v. Treatment of bites, stings, or contact with poisonous plants or animals

Appendix C to 1910.266—Comparable ISO Standards (Non-mandatory)

The International Labor Organization (ISO) standards listed in Appendix C are comparable to the corresponding Society of Automotive Engineers (Standards that are referenced in 1910.266). Utilization of the ISO standards in lieu of the corresponding SAE standards should result in a machine that meets the OSHA standard.

Appendix D—Definitions

1910.266(c) definitions

1. This standard establishes safety practices, means, methods and operations for all types of logging, regardless of the end use of the wood. These types of logging include, but are not limited to, pulpwood and timber harvesting and the logging of sawlogs, veneer bolts, poles, pilings and other forest products. This standard does not cover the construction or use of cable yarding systems.
2. This standard applies to all logging operations as defined by this section.
3. Hazards and working conditions not specifically addressed by this section are covered by other applicable sections of Part 1910.
4. Definitions applicable to this section.

Arch—An open-framed trailer or built-up framework used to suspend the leading ends of trees or logs when they are skidded.

Backcut (felling cut)—The final cut in a felling operation.

Ballistic nylon—A nylon fabric of high tensile properties designed to provide protection from lacerations.

Barber-chair—Vertical split of a tree during the falling procedure. Generally a result of improper facing and/ or backcutting. Characterized by a portion of the fallen tree being left on the stump. (from forestry.about.com/library/glossary/bllogglb.htm)

Buck—To cut a felled tree into logs.

Butt—The bottom of the felled part of a tree.

Bypass—Situation created when the two cuts of the undercut (free cut) do not meet exactly, i.e. one bypasses the other. Creates undesirable results such as barber chairing, cracked tree butts, excessive fiber pull and misdirected fall of the tree. (from forestry.about.com/library/glossary/bllogglb.htm)

Cable yarding—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 and/or towers. The trees or logs may be either dragged across the ground on the cable or carried while suspended from the cable.

Chock—A block, often wedge shaped, which is used to prevent movement; e.g., a log from rolling, a wheel from turning.

Choker—A sling used to encircle the end of a log for yarding. One end is passed around the load, then through a loop eye, end fitting or other device at the other end of the sling. The end that passed through the end fitting or other device is then hooked to the lifting or pulling machine.

Danger tree—A standing tree that presents a hazard to employees due to conditions such as, but not limited to, deterioration or physical damage to the root system, trunk, stem or limbs, and the direction and lean of the tree.

Debark—To remove bark from trees or logs.

Deck—A stack of trees or logs.

Designated person—An employee who has the requisite knowledge, training and experience to perform specific duties.

Domino felling—The partial cutting of multiple trees which are left standing and then pushed over with a pusher tree.

Fell (fall)—To cut down trees.

Feller (faller)—An employee who fells trees.

Grounded – The placement of a component of a machine on the ground or on a device where it is firmly supported.

Guarded—Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable enclosures, covers, casings, shields, troughs, railings, screens, mats, or platforms, or by location, to prevent injury.

Health care provider—A health care practitioner operating within the scope of his/her license, certificate, registration or legally authorized practice.

Landing—Any place where logs are laid after being yarded, and before transport from the work site.

Limbing—To cut branches off felled trees.

Lodged tree (hung tree)—A tree leaning against another tree or object which prevents it from falling to the ground.

Log—A segment sawed or split from a felled tree, such as, but not limited to, a section, bolt, or tree length.

Logging operations—Operations associated with felling and moving trees and logs from the stump to the point of delivery, such as, but not limited to, marking, felling, bucking, limbing, debarking, chipping, yarding, loading, unloading, storing, and transporting machines, equipment and personnel from one site to another.

Machine—A piece of stationary or mobile equipment having a self-contained powerplants, that is operated off-road and used for the movement of material. Machines include but are not limited to tractors, skidders, front-end loaders, scrapers, graders, bulldozers, swing yarders, log sackers and mechanical felling devices, such as tree shears and feller-bunchers.

Rated capacity—The maximum load a system, vehicle, machine or piece of equipment was designed by the manufacturer to handle.

Root wad—The ball of a tree root and dirt that is pulled from the ground when a tree is uprooted.

Serviceable condition—A state or ability of a tool, machine, vehicle or other device to operate as it was intended by the manufacturer.

Skidding—The yarding of trees or logs by pulling or towing them across the ground.

Slope (grade)—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 percent slope.

Snag—Any standing dead tree or portion thereof.

Spring pole—A tree, segment of a tree, limb, or sapling which is under stress or tension due to the pressure or weight of another object.

Tie down—Chain, cable, steel strips or fiber webbing and binders attached to a truck, trailer or other conveyance as a means to secure loads and to prevent them from shifting or moving when they are being transported.

Undercut—A notch cut in a tree to guide the direction of the tree fall and to prevent splitting or kickback.

Vehicle—A car, bus, truck, trailer or semi-trailer that is used for transportation of employees or movement of material.

Winching—The winding of cable or rope onto a spool or drum.

Yarding—The movement of logs from the place they are felled to a landing.

Appendix E

CPL 02-01-019 (CPL 2-1.19) Logging Operations, Inspection Procedures and Interpretive Guidance can be found at

www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=1525

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Free On-Site Safety Consultation

Upon request, a consultant from Consultative Services can visit your logging site to offer advice on reducing hazards and eliminating injuries. The consultant will evaluate your equipment and procedures and help you establish a work site safety program. The consultant will contact you directly to arrange a meeting after receiving your request.

Request for On-Site Safety Consultation Logging Operations

(Please print)

Company Name: _____

Contact Person: _____

Title: _____

Mailing Address: _____

Site Address: _____

Work Phone: _____ Cell Phone: _____

E-Mail Address: _____

Number of employees at your worksite _____

Mail To: N.C. Department of Labor
Occupational Safety and Health Division
Consultative Services Bureau
1101 Mail Service Center
Raleigh, NC 27699-1101

or Fax To: N.C. Department of Labor
Occupational Safety and Health
Consultative Services Bureau
(919) 807-2902

Or Call: Consultative Services Bureau
(919) 807-2899
Give information requested above.

KEEP A copy for your request on the job site.

Logger Safety Checklist Booklet Order Form

To reorder a new Logger Safety Checklist Booklet, please fill out the form below and mail it to the NCFA at 1600 Glenwood Avenue, Suite I, Raleigh, NC 27608. One Logger Safety Checklist Booklet is available to an NCFA business each year at no charge; there will be a \$10.00 shipping and handling charge for non-members or for each additional booklet ordered. For more information or questions, call the NCFA at (919) 834-3943 or 1-800-231-7723.

Logger Safety Checklist Booklet Order Form

Company: _____

Address: _____

City/State/Zip: _____

Phone: _____

Please send me _____ copy(s) of the Logger Safety Checklist Booklets.

NCFA Member – Business ☐-YES ☐-NO

One (1) Logger Safety Checklist Booklet @ No Charge
To NCFA Members = \$0.00

Each additional Logger Safety Checklist
Booklet (\$10.00 each)
Or to Non-NCFA Members _____ X \$10.00 = _____

Total Enclosed = _____

Please make check payable to the NCFA and mail to:
1600 Glenwood Avenue, Suite I, Raleigh, NC 27608

For technical assistance or training on OSHA standards and their interpretation, contact:

N.C. Department of Labor

Occupational Safety and Health Division

Education, Training and Technical Assistance Bureau

1-800-625-2267

1-919-807-2875

