



## Chapter 2—Safety Requirements (Suggested time: 2 hours)

**Chapter Objectives:** Students will be able to identify the elements in a job hazard analysis (JHA): the task or procedure to be accomplished, the hazards associated with the task or procedure, abatement actions to eliminate or reduce the hazards, first-aid and emergency evacuation procedures.

Students will learn why personal protective equipment (PPE) is used, how it is used, and how it is maintained.

Students will be able to identify common safety mistakes made by sawyers.

### Job Hazard Analysis

A JHA (see sample at the end of this chapter) must be prepared (preferably with the assistance of the involved employees) before beginning any work project or activity. The JHA must:

- Identify the task or procedure to be accomplished. Such tasks could include limbing, bucking, or felling.
- Identify the hazards associated with the task or procedure. These hazards may include physical, biological, environmental, chemical, and other hazards. Examples of hazards include:
  - Physical hazards: Rocky terrain, slippery slopes.
  - Biological hazards: Insect bites, hantavirus.
  - Environmental hazards: Weather-related hazards such as hypothermia, wind, lightning.
  - Chemical hazards: Hazardous materials such as fuel mix for chain saws and oil for crosscut saws.
  - Other hazards: Personal security issues, public traffic, hunting seasons.
- Identify abatement actions that can eliminate or reduce hazards. Abatement actions in order of preference include:

1. Engineering controls: The most desirable method of abatement (such as ergonomic tools and equipment).
  2. Substitution: Such as switching to high flashpoint, nontoxic solvents.
  3. Administrative controls: Such as limiting exposure by reducing work schedules or establishing appropriate work practices and procedures.
  4. PPE: The last method of abatement (such as using hearing protection when working with chain saws).
- Identify first-aid supplies and emergency evacuation procedures. In the event of an emergency evacuation, be prepared to provide the following information:
    - Nature of the accident or injury (avoid using the victim's name).
    - Type of assistance needed (ground, air, or water evacuation).
    - Location where the accident occurred and best access to the work site (road name or number).
    - Radio frequencies.
    - Contact person.
    - Local hazards to ground vehicles or aviation.
    - Weather conditions (windspeed and direction, visibility, temperature).
    - Topography.
    - Number of individuals to be transported.
    - Estimated weight of individuals for air or water evacuation.

### First Aid

Refer to the *Health and Safety Code Handbook* chapter 20, sections 21.21 and 21.22, for information on handling a medical emergency. The onsite first-aid kit must have supplies that meet Occupational Safety and Health Administration (OSHA) specifications and requirements. A Type IV first-aid kit must be available as a minimum (General Services Administration national stock number NSN 6545-01-010-7754). A more complete kit meeting higher standards may be used.



## Emergency Evacuation Plan

An emergency evacuation plan is essential for any field project, especially one involving chain saws and crosscut saws. All employees need to be proficient in using a radio. They need to know which frequencies to use and whom to contact in the event of an emergency. The latitude and longitude and/or the legal location for an emergency medical helispot shall be determined and included in the JHA before starting any work. The entire crew shall know where the helispot is located. The emergency evacuation plan needs to be updated when the work location changes.

The JHA and emergency evacuation plan shall be signed by employees, signifying that they have read and understood the contents, have received the required training, are qualified to perform the task or procedure, and will comply with all safety procedures.

A copy of the JHA, the bloodborne-pathogen exposure control plan, the material safety data sheets for products used on the work project or activity, and the emergency evacuation plan must be kept onsite during the project. The JHA can be reviewed and updated during tailgate safety sessions. These sessions take place before a new project or activity is begun, when changes are made (such as changing location, adding crewmembers, or changing job responsibilities), or whenever employees believe a session is needed. Topics often focus on the hazards associated with the job and methods to eliminate or abate them.

## Personal Protective Equipment

Refer to the *Health and Safety Code Handbook* chapter 70, section 72 for items that must be included in the JHA.

<b>PPE</b>	<b>Chain Saw Operations</b>	<b>Crosscut Saw Operations</b>
<b>Forest Service-approved hardhat</b>	Full brim or cap style	Full brim or cap style
<b>Wrap-around eye protection</b>	Safety glasses or shield	Safety glasses or shield
<b>Hearing protection</b>	Plugs or muffs rated for 85 decibels and higher	Not required
<b>Long-sleeved shirt</b>	Required	Optional
<b>Gloves</b>	Slip-resistant, appropriate for the weather conditions, and shall be cut-resistant for chain filing	Slip-resistant, appropriate for the weather conditions
<b>Trousers</b>	Loose fitting, without a solid hem, or that can be tucked into boots. Do not cut fire pants and allow them to ravel (stag).	Loose fitting, without a solid hem, or that can be tucked into boots. Do not cut fire pants and allow them to ravel (stag).

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<b>PPE</b>	<b>Chain Saw Operations</b>	<b>Crosscut Saw Operations</b>
<b>Boots</b>	Heavy-duty, cut-resistant or leather, waterproof or water-repellent, 8-inch-high, laced, with nonskid soles and adequate ankle support. Hard toes are optional ( <i>Health and Safety Code Handbook</i> ). Calked boots are recommended for wet, slippery conditions.	Heavy-duty, cut-resistant or leather, waterproof or water-repellent, 8-inch-high, laced, with nonskid soles and adequate ankle support. Hard toes are optional ( <i>Health and Safety Code Handbook</i> ). Calked boots are recommended for wet, slippery conditions.
<b>Chain saw chaps</b>	Must overlap boots by at least 2 inches. Only saw chaps provided by the General Services Administration meeting the most current Forest Service specifications (6170-4) are approved for purchase and use.	Optional
<b>Type IV first-aid kit</b>	Required. Employees should carry their own disposable gloves.	Required. Employees should carry their own disposable gloves.

PPE should be used with engineering controls, substitution, administrative controls, or a combination of those approaches. Relying on PPE alone is not adequate.

General requirements should be followed for assessing the head, eye, face, hand, and foot hazards of a work project or activity.

**General Requirements—**

- Select PPE based on hazards identified in the JHA.
  - PPE shall fit properly.
  - Defective, damaged, or unsanitary PPE shall not be used.
  - Supervisors shall assure the adequacy of PPE as well as its proper maintenance and sanitation.
- Each employee shall be trained to wear the PPE required by the JHA. Training shall include:

- The required PPE and when and how it should be worn.

- Proper care, maintenance, useful life, limitations, and disposal of PPE.

- Before performing any work project or activity requiring PPE, employees need to demonstrate an understanding of its proper use. Employees are accountable for accidents and injuries that result from failing to use or from misusing required PPE.
- Additional training may be necessary. Circumstances in which supervisors should provide additional training include:
  - Workplace changes that make earlier training obsolete.
  - Changes in the PPE to be used.
  - Evidence that an employee’s knowledge or use of PPE is not adequate.



### Specific Requirements—

- *Eye and face protection:* Appropriate protection (including side protection) is needed when employees are exposed to eye or face hazards such as flying particles, chemical gases or vapors, or potentially injurious light (such as ultraviolet light). Face shields can be used in saw operations in addition to safety glasses or safety goggles.
- *Noise protection:* To comply with 29 CFR 1910.95, employees need to be in a hearing conservation program and wear ear plugs or ear muffs or both when working with equipment louder than 85 decibels (*Health and Safety Code Handbook* chapter 20, section 21.13b).
- *Head protection:* All hardhats and helmets should be designed to provide protection from impact and penetration hazards from falling objects. Inspect shells daily for signs of dents, cracks, penetration, or any other damage that might compromise protection. Suspension systems, headbands, sweatbands, and any accessories also should be inspected daily.
- *Hand protection:* Ensure that hand protection protects employees from the specific hazards that will be encountered. Gloves often are relied on to prevent cuts, abrasions, burns, and skin contact with chemicals that can cause local or systemic problems (29 CFR 1910.138).
- *Foot protection:* Footwear designed to prevent injury from falling or rolling objects and from objects that could pierce the soles. Heavy-duty, cut-resistant or leather, waterproof or water-repellent, 8-inch-high, laced boots with nonskid soles and adequate ankle support are required for chain saw use.
- *Additional protection:* Saw chaps, saw shoulder pads, or other PPE that provide cut resistance or puncture protection.

### How Chain Saw Chaps Protect the User

When a chain saw strikes chain saw chaps, Kevlar fibers are pulled into the chain saw's drive sprocket, slowing and quickly stopping the chain.

A back-coated nylon shell covers the Kevlar protective pad inside the chaps. The shell resists water, oil, and abrasions. The protective pad consists of five layers of Kevlar in the following order: woven Kevlar, felted Kevlar, woven Kevlar, woven Kevlar, and felted Kevlar. Kevlar is an aramid fiber similar to the Nomex material used in firefighter's clothing. Kevlar is more resistant to flame than Nomex. When chain saw chaps are exposed to temperatures higher than 500 degrees Fahrenheit, the nylon shell may melt, but the protective Kevlar pad will not burn.

Chain saw users shall wear chaps. Chain saw chaps need to be adjusted properly and worn snug to keep them positioned correctly on the legs. The chaps should provide coverage 2 inches below the boot tops. Proper fit and correct length maximize protection!

*Chain Saw Chaps Specifications (6170-4)*—The Forest Service has provided cut-resistant protective chaps for chain saw sawyers since 1965. Chain saw chaps have prevented thousands of serious injuries.

The protective pad in the original Forest Service chain saw chaps consisted of four layers of ballistic nylon. Tests of chain saw chaps conducted by the Missoula Technology and Development Center (MTDC) concluded that

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four layers of ballistic nylon offered protection to a chain speed of 1,800 feet per minute without a cut through. In 1981 Forest Service chain saw chaps were redesigned to improve the level of protection to a chain speed of 2,500 feet per minute without a cut through. The weight of the chaps was reduced by 40 percent, making them more comfortable.

The center monitors chain saw injuries. Because chain saws require right-hand operation, the majority of chain contact injuries occur on the left leg. In 2000, the Forest Service chain saw chaps were redesigned. The new design provides protection to a chain speed of 3,200 feet per minute without a cut through and increases the area of coverage for the left side of the left leg by about 2½ inches, and for the left side of the right leg by about 1½ inches. The higher level of protection and larger area of protection increased the weight of each pair of chaps by 6 to 8 ounces, depending on the length (32, 36, or 40 inches). Only saw chaps provided by the General Services Administration that meet the most current Forest Service specifications (6170-4) are approved for purchase and use by Forest Service employees.

### Inspection and Replacement

Chain saw chaps need to be inspected and replaced when appropriate. Replace chain saw chaps when:

- The outer shell has numerous holes and cuts. Holes in the outer shell allow bar oil to be

deposited on the protective pad. The oil acts as an adhesive, preventing fibers in the pad from moving freely, decreasing the protection.

- Wood chips and sawdust are evident in the bottom of the chaps.
- Repairs have stitched through the protective pad. Machine or hand stitching the protective pad prevents the fibers from moving freely, decreasing the protection.
- Cleaning has been improper. Detergents with bleach additives decrease the protection.
- High-pressure washing has destroyed the protective pad.
- The chaps have a cut that is more than 1 inch long in the first layer of yellow Kevlar.

### Caring for Chain Saw Chaps

Treat your chain saw chaps as a **CRITICAL** piece of safety equipment. Keep them as clean as possible. Appropriate and timely cleaning reduces the flammability of the chaps and keeps them from soiling your clothing. Do not use your chaps as a chain stop.

Use *Citrosqueeze*, a commercially available citrus-based cleaning product, to clean chain saw chaps. Citrosqueeze has been tested and approved by Dupont for cleaning Nomex and Kevlar. Do not machine wash or machine dry chain saw chaps.

### Cleaning Chain Saw Chaps

Hose and brush off chain saw chaps to remove dirt. Citrosqueeze must be diluted before use.

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- For light soiling, use a Citrosqueeze solution in a spray bottle (mix 1 part Citrosqueeze concentrate to 10 parts water). Spray solution on the area to be cleaned and brush the solution into the chaps with a bristle brush. Wait one-half hour, thoroughly rinse the chaps with cold water, and allow them to air dry.
- For heavy petroleum contamination, soak chain saw chaps in Citrosqueeze solution for a minimum of 4 hours, overnight if possible. Brush the chaps with a bristle brush, rinse them thoroughly with cold water, and allow them to air dry. Many pairs of chain saw chaps can be cleaned in a single soak tank. Use 10 to 15 gallons of solution in a soak tank.

A United States manufacturer for Citrosqueeze is:

Emco Industries  
2590 Jason Court  
Oceanside, CA 92054  
Phone: 760-305-5561  
Fax: 760-305-5562

### Repairs

Clean all chaps before repairing them. Repair cuts and holes in the outer shell as soon as possible to prevent the protective Kevlar pad from becoming contaminated with bar oil and petroleum products.

When repairing damage to the chaps' nylon shell, use a commercially available product called *Seam Grip*. Seam Grip provides a flexible, waterproof, and abrasion-resistant patch that will prevent petroleum products from contaminating the protective Kevlar pad.

Remove chain saw chaps from service if they have a cut longer than 1 inch in the top layer of Kevlar.

To repair holes and tears in the nylon shell:

- Cut a piece of notebook or printer paper that extends about 2 inches beyond the edge of the damage.
- Slip the paper inside the hole or tear so the paper lies on top of the protective Kevlar pad.
- Lay the chaps on a flat, level surface and press the nylon shell onto the piece of paper.
- Squeeze Seam Grip onto the paper and onto the sides of the tear so there is good coverage on all sides of the tear or hole.
- Allow the patch to dry for at least 12 hours before using the chaps.

Seam Grip is available through outdoor retailers. To learn of retailers close to you, contact:

McNett Corp.  
Box 996  
Bellingham, WA 98227  
Phone: 360-671-2227  
Fax: 360-671-4521  
Web site: <http://www.mcnett.com>



## Situational Awareness

The situational awareness checklist can be used for self-assessment during sawing operations. It also can be used for discussions, tailgate safety sessions, or one-on-one problem solving (to overcome performance or skill deficiencies) in the field.

### Checklist of Personal Safety Considerations and Attitude

- How do I feel about this sawing assignment?
- Am I exercising sound judgment and awareness?
- Is my attitude influencing me to go against my better judgment (gut feeling)?
- Is my mind on my work project or activity?
- Do I have self-confidence?
- Am I overconfident?
- Am I doing this against my will? (*Health and Safety Code Handbook*, chapter 20, section 22.48)
- Is peer pressure a factor?
- Am I professional enough to decline the assignment and ask for assistance?
- Do I have all of the required PPE and sawing equipment to do the job safely? Am I committed to using the PPE and equipment correctly?
- Am I complacent?
- Am I violating any safe operating procedures?
- Do I feel hurried or unusually stressed to get the tree on the ground or bucked?
- Have all options been considered and discussed with others?
- Am I in an unfamiliar environment and timber type?
- Do I watch out for my coworkers, contractors, and the public?

## Evaluating the Complexity of the Assignment

The individual sawyer must determine the complexity of the assignment. The evaluation of the complexity of the assignment must be based on the individual sawyer's skill, knowledge, and an understanding of the sawyer's personal capabilities and limitations. The final decision to cut any tree is left up to the individual sawyer. You have the responsibility to say no and walk away from any sawing situation that is beyond your capabilities.

Once the specific situation has been assessed thoroughly, the decision to cut or not to cut will be determined by the following *Go, No-Go* process.



### Deciding Whether To Cut a Tree

- Go!** I feel comfortable with the sawing situation—I will cut the tree.
- No Go!** I don't feel comfortable with the situation—I will walk away from the tree.

Never base your decision on what you think you *might* be able to do. Remember...your safety and the safety of your coworkers depends on the decisions you make.

**Sample Job Hazard Analysis** (Following pages)



1. WORK PROJECT/ACTIVITY <b>CHAIN SAW USE</b>	2. LOCATION	3. UNIT
4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
7. TASKS/PROCEDURES	9. ABATEMENT ACTIONS (Engineering controls • substitution • administrative controls • PPE)	
<p>U.S. Department of Agriculture Forest Service</p> <p><b>JOB HAZARD ANALYSIS (JHA)</b> References: FSH 6709.11 and 6709.12 (Instructions on reverse)</p>		
<p><b>Chain Saw Operation</b></p>	<p><b>8. HAZARDS</b></p> <p>Falling objects Flying or spraying objects Noise Sharp or pointed objects</p> <p>Ergonomics, fatigue</p>	<p><b>Qualifications</b></p> <ul style="list-style-type: none"> <li>• Current certification by a nationally recognized organization to render first aid and perform CPR. Participation in an approved crosscut/chain saw program (Classroom and field training encompassing in part or in total a national training program, such as Wildland Fire Saws S-212). Supervisors—Ensure that saw operators receive training or retraining in first aid and CPR before certifications expire.</li> </ul> <p>Elements include:</p> <ul style="list-style-type: none"> <li>• Demonstration of sawing ability (to a certified operator or certified instructor) in functional areas.</li> <li>• Supervision by a certified instructor or certified operator of saw work by new operators. Supervisors—Monitor proficiency of sawyers to recognize the need for recertification (additional training) in less than 3 years.</li> </ul> <p><b>Personal Protective Equipment (PPE)</b></p> <p>Employees—Maintain PPE in a clean and fully functional condition.</p> <p>Required PPE:</p> <ul style="list-style-type: none"> <li>• Forest Service-approved hardhat.</li> <li>• Eye protection.</li> <li>• Hearing protection (85 dB and above).</li> <li>• Appropriate gloves (cut-resistant gloves for chain filing).</li> <li>• Long-sleeved shirt.</li> <li>• Chain saw chaps (Forest Service—approved, minimum of 2 inches boot overlap).</li> <li>• Heavy-duty, cut-resistant or leather, waterproof or water-repellent, 8-inch-high, laced boots with nonskid soles (hard toes are optional).</li> <li>• Fire shelter (wildfire and prescribed-burn assignments).</li> </ul> <p>Required chain saw features:</p> <ul style="list-style-type: none"> <li>• Throttle interlock.</li> <li>• Felling and bucking spikes for felling and bucking operations (full set of two).</li> <li>• Antivibration system.</li> <li>• Chain brake, fully functional.</li> <li>• Proper saw for the job, fully operational (full wraparound handle bar for felling operations is required, three-quarter handlebars are allowed for bucking and limbing only).</li> <li>• Proper bar length for the specific work project or activity.</li> <li>• Bow bars with top and bottom chain guards and stingers.</li> <li>• Chain, filed and maintained.</li> </ul> <p>General equipment:</p> <ul style="list-style-type: none"> <li>• Type IV first-aid kit.</li> <li>• Fire extinguisher.</li> <li>• Chain saw wrench.</li> <li>• Chain file with handle and guard.</li> <li>• Approved safety container for fuel.</li> <li>• Chain and bar oil container, clearly marked.</li> <li>• Proper wedges for the specific work project or activity (wooden wedges are not permitted).</li> <li>• Single-bit ax or maul, 3 to 5 pounds.</li> </ul>



1. WORK PROJECT/ACTIVITY <b>CHAIN SAW USE</b>	2. LOCATION	3. UNIT
4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
7. TASKS/PROCEDURES	9. ABATEMENT ACTIONS (Engineering controls • substitution • administrative controls • PPE)	
<p>U.S. Department of Agriculture Forest Service</p> <p><b>JOB HAZARD ANALYSIS (JHA)</b> References: FSH 6709.11 and 6709.12</p>		FS-6700-7 (03/00)
<p><b>Transporing the Saw</b></p> <p>Walking</p> <p>Vehicle</p>	<p><b>9. ABATEMENT ACTIONS</b> (Engineering controls • substitution • administrative controls • PPE)</p> <p><b>Safety Practices</b></p> <ul style="list-style-type: none"> <li>• Carry so the bar (teeth) point downhill and away from the body—cover the bar if carrying on your shoulder. Prevent injury from cutters, dogs, and muffler.</li> <li>• Shut down the saw when carrying farther than tree to tree, or when slippery surfaces or brush create additional hazards.</li> <li>• Activate the chain brake for shorter distances.</li> <li>• Do not carry saws or fuel (including empty fuel containers) in the passenger compartment.</li> <li>• Do not store fuel and food together.</li> </ul> <p>Analyze the cutting area by considering:</p> <ul style="list-style-type: none"> <li>• Location of people, structures, powerlines, and other obstacles.</li> <li>• Roads and travel in the cutting area.</li> <li>• Topography and steep ground.</li> <li>• Nearby hazards such as trees, low-hanging and dead limbs, rocks, and brush.</li> <li>• Primary and secondary escape routes, and safety zones.</li> <li>• Wind direction and velocity, such as steady versus gusting and/or changing directions.</li> <li>• Tree species, both live and dead.</li> <li>• Diameter and height of trees.</li> <li>• Soundness of tree (split, lightning struck, broken-off top, rot, deterioration or physical damage to the root system, trunk, stem, limbs, or bark).</li> <li>• Lean direction.</li> <li>• Limb distribution.</li> <li>• Widow makers.</li> <li>• Spiked top.</li> <li>• Burning top.</li> <li>• Moisture (rain, snow, or ice).</li> </ul>	
<p><b>Situational Awareness and Sizeup</b></p> <p>Slips, trips, and falls Walking surfaces</p> <p>Falling objects</p>	<p><b>Primary and Secondary Escape Routes, and Safety Zones</b></p> <ul style="list-style-type: none"> <li>• Select and prepare the work area by clearing escape routes before starting the cut.</li> <li>• Walk out and check the intended lay of the tree thoroughly.</li> <li>• Plan the route from the stump to the safety zone, generally not less than 20 feet away; the farther the better.</li> <li>• If possible, stand behind another tree, preferably quartering back from the planned direction of fall. Wait and watch for at least 30 seconds after the tree hits the ground for branches and other broken tree parts to fall. The shielding tree should be sound and large enough to provide protection.</li> </ul> <p><b>Procedures</b></p> <ul style="list-style-type: none"> <li>• Know where the tip of the bar is at all times.</li> <li>• Anticipate log tensions (binds) and compressions and plan mitigation.</li> <li>• Use wedges and/or the pie cut. Initiate the cut slowly to observe the bind.</li> <li>• Use caution when cutting limbs supporting the log off the ground. Do not saw from the downhill side. On steep ground, prevent bucked sections from rolling or sliding. Limb from the top of large logs.</li> <li>• Watch for and reduce tension carefully on saplings and limbs, using a series of small cuts on the tensioned side.</li> </ul>	
<p><b>Bucking, Brushing, and Limbing</b></p> <p>Kickback Bind Rolling logs Tension</p>		



1. WORK PROJECT/ACTIVITY <b>CHAIN SAW USE</b>	2. LOCATION	3. UNIT
4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
9. ABATEMENT ACTIONS (Engineering controls • substitution • administrative controls • PPE)		
<p>U.S. Department of Agriculture Forest Service</p> <p><b>JOB HAZARD ANALYSIS (JHA)</b> References: FSH 6709.11 and 6709.12 (Instructions on reverse)</p> <p><b>7. TASKS/PROCEDURES</b></p> <p><b>Felling</b></p>	<p><b>8. HAZARDS</b></p> <p>Human factors Other hazards (kickback, binds, rolling logs)</p> <p>Darkness</p> <p>Burns, flammability, and toxic fumes</p>	<p><b>Procedures</b></p> <ul style="list-style-type: none"> <li>• Consider your mental and physical condition.</li> <li>• Saw from a safe standing height. Be alert and look up frequently. The undercut must be clean with an opening large enough to control the tree's fall nearly to the ground. Do not use corner or side cuts in hollow trees unless adequate holding wood can be maintained. Give a warning shout before beginning the back cut. Give another warning shout just before the tree falls. Insert a wedge into the back cut as soon as possible. In small-diameter trees, wedge into a corner cut. Do not cut off all of the holding wood. As the tree commits to the undercut, watch the top as you get away from the stump as quickly as possible. If the tree moves in a direction that compromises the primary escape route, use the secondary route. Do not leave a partially cut tree without marking it and warning others. When situations are deemed unsafe, use alternate methods or cancel the task.</li> <li>• No felling at night.</li> </ul> <p><b>Safety Practices</b></p> <ul style="list-style-type: none"> <li>• A hazard communication training program provides information related to general awareness, hazard chemical inventory, and MSDSs.</li> <li>• A hazardous-chemical inventory shall be maintained and shall be readily accessible to all employees.</li> <li>• Never handle hazardous chemicals that do not have an MSDS. An MSDS is required for each chemical used onsite and shall be readily accessible to employees at all times.</li> </ul> <p><b>Transportation</b></p> <ul style="list-style-type: none"> <li>• All containers (safety cans, drums, tanks, or tank trucks) used for transporting hazardous materials must be correctly labeled or placarded to ensure quick identification of the materials in an emergency.</li> </ul> <p><b>Dispensing</b></p> <ul style="list-style-type: none"> <li>• General Safety—All handling and dispensing of flammable liquids shall be done in a well-ventilated area free of sources of ignition, with bonding between the dispensing equipment and the container being filled.</li> </ul> <p><b>Procedures</b></p> <ul style="list-style-type: none"> <li>• Teach all employees who are subject to exposure, especially those known to be highly sensitive, to recognize poisonous plants. When possible, do not assign allergic employees to jobs that expose them to poisonous plants.</li> <li>• Provide and apply a skin protectant or barrier cream. Fasten pant legs securely over boot tops (adhesive tape may be necessary).</li> <li>• Wear gloves and keep them away from the face and other exposed parts of the body. Do not touch skin with hands, clothes, or equipment that may have contacted poisonous plants.</li> <li>• Whenever the skin contacts a poisonous plant or noxious weed, wash the area with cold water within 1 to 3 minutes or as soon as possible. Use liberal amounts of water to ensure that all poisonous oils are washed off. While working around poisonous plants, do not wash with soap and/or hot water because they can remove natural protective oils from your skin.</li> <li>• Destroy poisonous plants around improved areas.</li> <li>• Avoid the smoke of burning poisonous plants. Inhaling this smoke can cause fever, malaise, respiratory problems, and severe rash.</li> <li>• Upon returning from the field, use rubbing alcohol to cleanse skin that contacted poisonous plants.</li> <li>• Clean tools with a citrus-based solvent before storing (use appropriate gloves and adequate ventilation).</li> <li>• Avoid handling contaminated clothes. Wash contaminated clothing separately from other clothes in hot water and detergent.</li> </ul>
<p><b>Handling Flammable and Combustible Liquids</b></p>		
<p><b>Working Around Poisonous Plants</b></p>		



U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY <b>CHAIN SAW USE</b>	2. LOCATION	3. UNIT FS-6700-7 (03/00)
JOB HAZARD ANALYSIS (JHA) References: FSH 6709.11 and 6709.12 (Instructions on reverse)	4. NAME OF ANALYST	5. JOB TITLE	6. DATE PREPARED
7. TASKS/PROCEDURES <b>Working Around Insects</b>	8. HAZARDS Ticks and mosquitoes	9. ABATEMENT ACTIONS (Engineering controls • substitution • administrative controls • PPE)	
<b>Procedures</b> <ul style="list-style-type: none"> <li>• Spray clothes with an insect repellent, as an additional barrier against ticks. Repellants, such as diethyl metatolamide (DEET), do not kill ticks. Some sprays do contain permethrin, which kills ticks on contact. DEET should not be applied to Nomex, only to skin. Permethrin can be applied to Nomex, but not to skin. Always follow the manufacturer's application instructions for insect repellants and treatments.</li> <li>• Wear light-colored clothing that fits tightly at the wrists, ankles, and waist. Each outer garment should overlap the one above it. Cover trouser legs with high socks or boots and tuck shirttails inside trousers.</li> <li>• Search the body repeatedly (such as during rest periods and lunch), especially hairy regions and inside clothing, as ticks seldom attach themselves within the first few hours.</li> <li>• Remove ticks with fine-tipped tweezers or fingers. Grasp the tick as closely as possible to the point of attachment and pull straight up, applying gentle pressure. Wash the skin with soap and water, then cleanse with rubbing alcohol. Do not try to remove the tick by burning it with a match or covering it with chemical agents. If the head pulls off when the tick is being removed, or if the tick cannot be removed, seek medical attention.</li> <li>• Once the tick has been removed, place it in an empty container so it can be given to a physician if you experience a reaction. Record the dates of tick exposure and removal. An early warning sign to watch for is a large red spot on a tick bite. Reactions within 2 weeks may include fever, chills, headache, joint and muscle ache, significant fatigue, and facial paralysis. Seek medical attention promptly if you experience these reactions.</li> </ul>			
Evacuation Plan (see attached Emergency Evacuation Plan)		12. DATE	
10. LINE OFFICER SIGNATURE	11. TITLE		
<p style="text-align: center;"><b>Field Site</b> <b>EMERGENCY EVACUATION PLAN</b></p>			
Work project/activity: <u>General saw use</u> Location: _____ Legal description: _____			
To prepare for an emergency that requires first aid and/or immediate evacuation of personnel due to serious injury, the following information shall be available to all crewmembers:			
<ul style="list-style-type: none"> <li>• Designated first-aid provider(s): at least one person on each crew should be designated to provide first aid.</li> <li>• Communication procedures to follow in the event of an emergency.</li> </ul>			

