

1 Purpose	To outline the requirements for safely felling trees and branch removal.
2 Application	Applies to all NTPC employees and contractors required to fell trees and remove branches.
3 Definitions	<p>Bucking Sawing a log or felled tree into smaller lengths.</p> <p>Felling Cutting a tree from the tree's stump and bringing the tree to the ground.</p> <p>Limbing Removing limbs from a tree that has been felled.</p>
4 References	<ul style="list-style-type: none"> • SJP 3.001: Management & Control of Transmission Line Clearing • SWP 3.01: Chainsaw Operation • SWP 4.06: Skin Protection
5 Equipment	<ul style="list-style-type: none"> • Properly maintained guide ropes • CSA-approved gas containers • Chainsaws • Insulated pole pruners • First aid kit
6 PPE	<ul style="list-style-type: none"> • CSA-approved fall arrest/restraint system • CSA-approved chainsaw boots • CSA-approved chainsaw pants • High-visibility clothing • Coveralls • Long-sleeve shirt and pants • Work gloves • CSA-approved Class E hard hat with full-face shield • CSA-approved safety glasses • CSA-approved hearing protection
7 Training	<ul style="list-style-type: none"> • Chainsaw operator training • Danger tree removal training

8 Work Practice

General

- Personal protective equipment appropriate to the hazards shall be worn, including hard hat with face shield, chainsaw pants, chainsaw boots, hearing protection, high-visibility clothing, work gloves, and long-sleeve shirt for skin protection.

Tree Removal Evaluation

- Before beginning any tree removal operation the chainsaw operator shall carefully consider the following and take appropriate actions to ensure a safe removal operation:
 - The area surrounding the tree, including nearby trees.
 - Species and shape of the tree.
 - Lean of the tree.
 - Loose limbs, chunks, or other overhead material.
 - Wind force and direction.
 - Decayed or weak spots throughout the tree.
 - Location and means to protect other persons and equipment.
 - Size and limitations of the work area.
 - Terrain characteristics.
 - Evidence of stinging insects or wildlife habitation in the tree.
- Hazard check:
 - Electrical conductors, communication lines.
 - Tree defects such as decay, dead or broken limbs, splits, hangers, etc.
 - Eliminate, control, or reduce hazards.
- Obstacle check:
 - Structures.
 - Paved surfaces.
 - Landscapes.
 - Utilities.
 - Other trees.
- Plan for:
 - Felling direction.
 - Lean.
 - Notch, hinge, back cut.
 - Need for ropes, etc.
 - Escape route.

- Equipment check:
 - Saws.
 - Ropes.
 - Rigging equipment.


Prior to Felling Trees

- Workers operating chainsaws shall follow *SWP 3.01: Chainsaw Operation*.
- Inspect all equipment prior to use. Do not use worn or damaged equipment (e.g., guide ropes, fall arrest/restraint systems, etc.).
Clear away branches and brush as required to provide sufficient room to work.
- Establish a safe escape route at a 45° angle from the direction opposite to the planned direction of fall.
- Ensure persons not actually engaged in cutting the tree are a minimum of two tree lengths from the tree being felled.

Felling Trees

- Transmission line clearing, including danger tree removal, shall be completed as per *Safe Job Procedure 3.001: Management & Control of Transmission Line Clearing*.
- When cutting trees over 15 cm in diameter, the standard notch shall be used whenever possible (i.e., a ground parallel cut as low to the ground as possible, at least 1/3 of the way through the tree, and an open notch cut of 45 degrees).
- Make the back cut approximately 2 inches above the notch, parallel to the ground.
- Holding wood shall be left so as to control the fall of the tree.
- Cutters shall give ample warning when a tree is about to fall and shall stand clear of the butt while the tree is falling.
- When the tree is clearly falling, the operator shall step into the escape route.
- Depending on terrain, the butt may bounce and hit the operator. The saw operator shall be clear of the butt zone.
- The saw operator must constantly be alert of falling branches and potential contact of other trees once the tree starts to fall.
- Partially cut trees shall be felled prior to vacating a work area.

	<ul style="list-style-type: none"> When more than one worker is involved in the felling of trees (i.e., roping) the saw operator shall call out “back cut” and ensure the other worker is aware of the falling of the tree. If a tree falls towards a power line, workers shall step away from the tree and not attempt to control that tree. <p>Ropes</p> <ul style="list-style-type: none"> Guide ropes shall be used where necessary to control the direction of the fall. Any tree with the potential to impact a power line shall be guide roped for control before felling. Manila hemp, polypropylene, and polyethylene ropes shall not be used as guide ropes. Anchors for guide ropes shall be installed in such a location that workers handling the guide ropes are able to stand well outside the striking distance of the tree. <p>Removing Branches from Trees</p> <ul style="list-style-type: none"> Cutters shall give ample warning before a limb is dropped. Severed branches (hangers) shall be removed from a tree prior to vacating a work area. Manually operated pole pruners used in proximity to energized lines shall be nonconductive and the ropes shall be equipped with insulated inserts. <p>Bucking and Limbing</p> <ul style="list-style-type: none"> Prior to bucking or limbing clear away any branches, brush, or objects that would present a hazard. Always limb on the opposite side of the log. Work only on the uphill side of a log lying on an incline.
9 Documentation	<ul style="list-style-type: none"> Chainsaw training certificate

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	Monitor: Director, Transmission & Distribution	SWP #: 3.03

Development		
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Approved by: D. Duncan	Director, Transmission & Distribution	Jun. 03, 2013

Revision History					
#	Revised Sections	Description of Revisions	Revised by (name, position)	Approved by (name, position)	Issue Date
01	8	Aligned with 2015 H&S Regs, added Bucking & Limbing section, points on pole pruner	E. Smith Director HSE	D. Duncan Director T&D	08-11-16
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