Vegetation Management Plan
VM-02

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1 Introduction

Vegetation Management (VM) is necessary to maintain safe and reliable electric service. Local, state, and federal regulations related to vegetation management define the requirements of Liberty as an investor-owned electric utility. The Vegetation Management Plan at Liberty outlines a vegetation management strategy designed to maintain regulatory compliance and mitigate vegetation threats that may impact utility infrastructure.

Liberty manages vegetation along approximately 700 miles of high voltage overhead electric facilities located in portions of seven counties in California. The majority of the service territory encompasses the western portions of the Lake Tahoe Basin. Over 90% of its service territory is designated by the State of California as high fire risk areas, and vegetation management is an essential component of Liberty's Wildfire Mitigation Plan.

1.1 Purpose

Liberty maintains reliable electric Transmission and Distribution systems by managing vegetation located under and adjacent to electric conductors in order to minimize the risk of tree failures striking utility infrastructure and vegetation encroachments into the specified clearance zones.

1.2 Objectives

The Liberty Vegetation Management Plan (VMP) is designed to improve the reliability of Liberty's Transmission and Distribution systems and to comply with regulatory requirements established by the California Public Utilities Commission (CPUC) General Order (GO) 95, California Public Resource Codes (PRC), and Title 14 California Code of Regulations (CCR) by establishing maintenance and inspection procedures to:

- Manage vegetation to prevent vegetation encroachment into the clearance zones under normal conditions as stated in the following regulations, as applicable. During Force Majeure[1] events it may not be possible to ensure that an encroachment into the clearance zones will not occur.
    - GO 95, Rule 35 (Case 13 and Case 14)
    - PRC Section 4292
    - PRC Section 4293
    - CCR Sections 1250-1258

[1] Circumstances that are beyond a utility's control, including natural disasters such as earthquakes, fires, tornados, hurricanes, landslides, wind shear, fresh gale, major storms, ice storms, and floods; human or animal activity such as logging, animal severing tree, vehicle contact with tree, or installation, removal, or digging of vegetation.

- Document the maintenance procedures and processes used to manage vegetation to prevent the encroachment into the clearances described in the regulations noted above.
- Include consideration of 1) conductor (line dynamics) 2) vegetation movement during high winds (tree dynamics), and 3) the interrelationships between vegetation growth rates, control methods, and inspection frequency.
- Provide timely notification to the appropriate VM personnel of vegetation conditions that could cause a flash-over or Fault, as described in VM-05 (Vegetation Threat Procedure).
- Identify, document, and mitigate trees that are located within the Utility Strike Zone (USZ) and are expected to pose a risk to electric facilities, as described in VM-03 (Hazard Tree Management Plan)
- Implement corrective actions to prevent encroachments into the clearance distances described in the regulations noted above due to work constraints.
- Inspect vegetation conditions annually or more frequently, as needed.
- Improve system reliability by reducing vegetation related interruptions to the electricity supply.
- Reduce the risk of fires caused by trees contacting electric facilities.
- Reduce the risk of vegetation causing damage to or otherwise interfering with electrical facilities.

2 Applicability

- Transmission (60kV-120kV)
- Distribution
- Vegetation Management Program

3 Definitions

Refer to the Liberty VM Glossary of Terms for other capitalized terms used in this document.

4 VM Plan Detail

4.1 Clearance Regulations

4.1.1 GO 95, Rule 35

Where overhead conductors traverse trees and vegetation, safety and reliability of service demand that certain vegetation management activities are to be performed to

establish and maintain necessary and reasonable clearances. Minimum clearances are established in Cases 13 and 14 of Rule 35.

- For Transmission and Distribution lines and equipment located in Non High-Fire Threat Districts (HFTD), GO 95, Rule 35 (Case 13) applies.
- For Transmission and Distribution lines and equipment located in Extreme (Tier 3) and Very High (Tier 2) HFTDs, GO 95, Rule 35 (Case 14) applies.

Strategy and Supporting Documentation

In order to prevent an encroachment into the Regulation Clearance Distance (RCD), described in Table 1 and Table 2 (see Section 4.4.4) below, Liberty or its approved contractor will inspect and manage all vegetation under and adjacent to its applicable lines operating under normal conditions. During the inspection and completion of work, movement of the line conductors, movement of the vegetation, and vegetation growth shall be taken into consideration.

Liberty, at its own discretion may obtain greater clearances than those listed in Table 1 and Table 2 to ensure compliance until the next scheduled maintenance. The consideration to obtain greater clearances will be based on various factors, including: line operating voltage, length of span, line sag, planned maintenance cycles, location of vegetation within the span, species type, species characteristics, vegetation growth rate and characteristics, vegetation management standards and best practices, local climate, elevation, potential for snow/ice loading, and fire risk.

Vegetation inspections and maintenance should be completed annually or more often as deemed necessary. Liberty or its approved contractor will verify the completion of annual vegetation maintenance.

4.1.2 California Public Resources Code § 4292 – Power Line Hazard Reduction

Any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or forest covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10-feet in each direction from the outer circumference of such pole or tower. Liberty complies with PRC §4292 by performing inspections and pole brushing on approximately 5,000 poles throughout its service territory.

4.1.3 Title 14, California Code Regulations Section § 1254 – Minimum Clearance Provisions PRC § 4292

The firebreak clearances required by PRC § 4292 are applicable within an imaginary cylindrical space surrounding each pole or tower on which a switch, fuse, transformer or lightning arrester is attached and surrounding each dead-end or corner pole, unless such pole or tower is exempt from minimum clearance requirements by provisions of Title 14, CCR, § 1255 or PRC § 4296. The radius of the cylindroid is 3.1 m (10 feet) measured horizontally from the outer circumference of the specified pole or tower with height equal to the distance from the intersection of the imaginary vertical exterior surface of the cylindroid with the ground to an intersection with a horizontal plane passing through the highest point at which a conductor is attached to such pole or tower. Flammable vegetation and materials located wholly or partially within the firebreak space shall be treated as follows:

Transmission and distribution lines and equipment located in Fire areas where PRC § 4292 applies:

(a) At ground level - remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will allow fire to spread, and;

(b) From 0 - 2.4 m (0-8 feet) above ground level remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 m (8 feet).

(c) From 2.4 m (8 feet) to horizontal plane of highest point of conductor attachment remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety.

Strategy and Supporting Documentation

In order to prevent vegetation growth and maintain a firebreak at the base of poles that support non-exempt equipment, Liberty or its approved contractor will inspect and manage vegetation at the base of poles, in accordance with PRC 4292 where feasible and permissible.

Vegetation inspections and maintenance work should be completed annually or more often as deemed necessary. Liberty or its approved contractor will verify the completion of annual vegetation maintenance.

4.1.4 California Public Resources Code § 4293 – Power Line Clearance Required

Any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, brush-covered

land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such areas, maintain a clearance of the respective distances in all directions between all vegetation and all conductors which are carrying electric current

Strategy and Supporting Documentation

In order to prevent an encroachment into the RCD described in Table 1 and Table 2 (Paragraph 4.4.4.) below, Liberty or its approved contractor will inspect and manage all vegetation under and adjacent to its applicable lines, operating under normal conditions. During the inspection and the completion of work, movement of the line conductors, movement of the vegetation, and vegetation growth shall be taken into consideration.

Vegetation inspections and maintenance should be completed annually or more often as deemed necessary. Liberty or its approved contractor will verify the completion of annual vegetation maintenance.

4.1.5 California Public Resources Code § 4295 – Clearance Not Required

A person is not required by Section 4292 or 4293 to maintain any clearing on any land if such person does not have the legal right to maintain such clearing, nor do such sections require any person to enter upon or to damage property which is owned by any other person without the consent of the owner of the property.

4.1.6 California Public Resources Code § 4295.5 – Right of Entry

(a) Notwithstanding any other law, including Section 4295, any person who owns, controls, operates, or maintains any electrical transmission or distribution line may traverse land as necessary, regardless of land ownership or express permission to traverse land from the landowner, after providing notice and an opportunity to be heard to the landowner, to prune trees to maintain clearances pursuant to Section 4293, and to abate, by pruning or removal, any hazardous, dead, rotten, diseased, or structurally defective live trees. The clearances obtained when the pruning is performed shall be at the full discretion of the person that owns, controls, operates, or maintains any electrical transmission or distribution line, but shall be no less than what is required in Section 4293. This section shall apply to both high fire threat districts, as determined by the California Public Utilities Commission pursuant to its rulemaking authority, and to state responsibility areas.

(b) Nothing in subdivision (a) shall exempt any person who owns, controls, operates, or maintains any electrical transmission or distribution line from liability for damages for the removal of vegetation that is not covered by any easement granted to him or her for the electrical transmission or distribution line.

4.1.7 PRC 4293 and GO 95, Rule 35 Clearance Exempt Trees

Throughout Liberty's service territory there are numerous occurrences where the minimum tree to conductor clearances cannot be met due to the location of large, mature trees with trunks that are currently within 4-feet of the high-voltage conductors. These trees in the past have been more commonly referred to as Major Woody Stem (MWS) trees and more recently as Clearance Exempt Trees

In October 1997 the CPUC made a change to GO 95 (Rules for Overhead Electric Line Construction), Rule 35 adding language that exempted certain trees from the clearance requirements found in the Public Resources Code (PRC) 4293, CPUC's GO 95, and CCR Title 14 Section 1256. In 2011, the California Board of Forestry amended Title 14 Section 1257, creating a permanent exemption rule (see Attachment A). The rule applies to conductors and equipment energized at less than 35kV and the exemption applies where:

- The conductors are insulated tree wire
- Insulated self-supporting aerial cable, maintained with the insulation intact
- Conductors are supported by sound and living tree trunks from which all dead or decadent branches have been removed.

4.2 Other Requirements

4.2.1 Criteria for Applying the Minimum Clearance Exemption

Exempt trees must meet all the following criteria as confirmed by a Certified Arborist or a Registered Professional Forester:

- The tree or limb must be greater than six (6) inches from the line and shall have sufficient strength or rigidity to prevent the trunk or limb from encroaching upon the six-inch minimum clearance under reasonably foreseeable local wind and weather conditions.
- The size of the tree or limb at the conductor level must be at least six (6) inches in diameter.
- The tree must not have "scaffold branches," below eight and one-half feet from the ground (so the tree cannot be easily climbed).

- The tree must not meet the definition of a "Hazard Tree" as identified in the Power Line Fire Prevention Field Guide or Liberty's Hazard Tree Management Plan (VM-03).

4.2.2 Inspections and Record Keeping of Clearance Exempt Trees

For all GO 95, Rule 35 and PRC 4293 Clearance Exempt trees, Liberty shall:

- Inspect the trees annually to verify they meet the criteria described in Section 4.2.4 of this plan
- Maintain an internal database of information about the Clearance Exempt Trees that includes;
  - The location of the tree in latitude/longitude in decimal degrees format (WGS84 Datum)
  - The tree species
  - The date of inspection
  - Alterations or corrections to the tree or to the facilities made by applying an engineering solution.
  - Report the information to Cal Fire annually by July 1, the information collected in the previous year (Trees located in State Responsibility Area only).

4.2.3 Line Construction and Relocation for Clearance Exempt Trees

When constructing, installing, replacing, or maintaining primary distribution equipment, Liberty shall prevent the creation of new Clearance Exempt Trees, to the extent feasible. Where there are site specific indications that a conductor has or will contact a Clearance Exempt Tree or a portion of a Clearance Exempt Tree, Liberty will correct the situation by applying an engineering solution or by altering the tree.

4.2.4 OSHA 1910.269 and ANSI Z133.1

Liberty generally contracts work with private tree companies who certify their employees as qualified line clearance tree workers (trimmer) and trainees. A qualified line-clearance tree worker is defined as an individual who, through related training and on the job experience, is familiar with the equipment and hazards in line clearance and has demonstrated the ability to perform the special techniques involved.

Liberty requires that contractors performing VM services comply with current safety standards as outlined in Occupational Safety and Health Administration (OSHA) standard 1910.269 and American National Standards Institute (ANSI) Code Z133.1.

Both standards are used to identify industry policies regarding arboricultural practices and line clearance tree work.

4.3 Tree Pruning, Removal, and Clean-up

4.3.1 Growth Characteristics

Trees must be identified and worked based on tree growth characteristics. The following list provides a guideline for defining tree growth characteristics within Liberty's service territory:

Slow Growth: Growth Potential is $\leq$1 foot per year

Meduium Growth: Growth Potential is 1 to 2 feet per year

Fast Growth: Growth Potential is $\geq$2 feet per year

4.3.2 Pruning

Trees pruned by Liberty or its designated contractors shall be in accordance with International Society of Arboriculture (ISA) and American National Standards Institute (ANSI) standards.

4.3.3 Removals

In many cases a tree near the electrical facilities must be removed rather than pruned. These circumstances may include trees growing directly under the power line within the right-of-way that would otherwise require topping, hazard trees with the potential to fail into the electrical facilities, or the health of the tree may be adversly affected by pruning. The objectives of tree removal are:

- To reduce the risk of tree failures that may impact the electrical facilities, adversely affect service reliability
- Provide for public safety
- Reduce the occurrence of systematic tree pruning that must be repeated

4.3.4 Slash and Debris Disposal

All limbs and brush less than 12 inches in diameter shall be treated to minimize the accumulation of surface fuels at the work location. All limbs, brush and debris located within 100 feet of equipment accessible roads shall be chipped and broadcasted or chipped and hauled off-site. When brush and limbs cannot be chipped and broadcasted or chipped and hauled off-site, the clean-up method may be lop-and-scatter or as otherwise specified.

Broadcasted chip depths shall not exceed four inches from the ground surface. Debris which is lopped and scattered shall not exceed depths of 18 inches from the ground surface. Liberty shall have the right to determine other disposal means or slash treatment methods.

Liberty will **not** grind stumps, unless required under certain government authorizations.

4.4 Clearance Requirements

4.4.1 Clearances for Lines and Equipment Operating at Less than 2.4kV

Power lines or their supporting structures operating at less than 2,400 volts, do not have mandated vegetation to conductor clearance requirements. These types of lines include open-wire secondary and coated triplex or quadruplex aerial cable (including service drops), and guy wires. The following clearances at time of pruning shall apply:

- **Open Wire Secondary**: Four feet minimum from tree to open wire conductor at the time of pruning. Trees scheduled for pruning for open wire secondary will be inventoried based on tree growth characteristics to avoid tree line contact with conductors.
- **Coated Aerial Cable:** Prune for strain or abrasion only. Trees scheduled for pruning will be identified as showing evidence of strain or abrasion with wires. Trees will be allowed to contact coated aerial cable or service drops that show no sign of strain or abrasion.
- **Guy and Support Wires:** Prune for strain or abrasion; two feet minimum clearance from tree or portion of tree that is in contact with guy and support wire above the insulator (guy bob).

4.4.2 Clearances for Lines and Equipment Operating at 2.4kV to 25kV

Liberty's distribution operating voltages are 12.5kV, 14.4kV, and 24.9kV. The following clearances are to be achieved during VM work for this voltage class:

- Slow and medium growth potential – 12 feet
- Fast growth potential – 15 feet
- Removal of overhanging limbs which can come into contact with facilities due to structural characteristics or due to snow/ice loading conditions.

4.4.3 Clearances for Lines and Equipment Operating at 60kV or Greater

Liberty owns and operates numerous 60kV and 120kV power lines which assist in transmitting high-voltage electricity from substation to substation. Due to the importance of maintaining electric reliability on these lines, it is necessary that the standards for tree pruning and removal be be greater than that of lower voltage distribution lines. In addition to the State mandated vegetation to conductor clearance, and to maintain system reliability, the following are to be addressed during VM work:

- Remove all branches which overhang the electrical conductors
- Remove all trees within the wire zone
- Remove all defected, dead, decayed or suppressed trees within the border zone

60kV Clearance Objectives

- Slow to medium growth potential – 12 feet
- Fast growth potential – 15 feet

120kV Clearance Objectives

- Slow to medium growth potential – 30 feet
- Fast growth potential – 35 feet

4.4.4 Clearance Tables

Table 1: Radial Clearance Requirements PRC 4293; GO 95, Rule 35, HFTD (Case 14)

Voltage	Regulation Clearance Distance **RCD**	Maintenance Action Threshold **MAT**	Maintenance Clearance Distance **MCD**
12kV – 25kV	4’	6’	12’-15’
60kV	4’	6’	12’-15’
120kV	10’	15’	30’-35’

RCD – Clearance distance between conductors and vegetation that is mandated by regulations.

MAT – Clearance distance that triggers the work scheduling process to prevent vegetation from encroaching into the RCD. The MAT is based on the regulation clearance with a safety margin multiplier of 1.5.

MCD – Clearance distance to be achieved at time of work. Minimum clearances based on Rule 35, Appendix 'E'.

Table 2: Radial Clearance Requirements GO 95, Rule 35, Non-HFTD (Case 13)

Voltage	Regulation Clearance Distance **RCD**	Maintenance Action Threshold **MAT**	Maintenance Clearance Distance **MCD**
12kV – 25kV	1.5'	6'	12'-15'
60kV	1.5'	6'	12'-15'
120kV	1.7'	15'	30'-35'

Note: **MAT** and **MCD** for Non-HFTD will be the same as those in the HFTD

In addition to the above clearances, Liberty shall mitigate vegetation encroachments on circuits or portions of circuits energized at voltages less than the minimum voltages specified in the above tables when the equipment shows evidence of strain or abrasion from vegetation contact. The strain or abrasion shall be corrected by any of the following methods:

- Reducing conductor tension
- Rearranging or replacing the conductor
- Pruning or removing vegetation (see Section 4.4.1)
- Placing mechanical protection on the conductor

4.5 Notifications

4.5.1 Pruning

In most cases permission to prune trees that are encroaching on electric facilities is not required should the pruning be justified for the utility to maintain compliance with State laws. Liberty or its contractors will make reasonable efforts to notify property owners of scheduled tree pruning.

Certain trees require more aggressive pruning to maintain safety and electric reliability. Should the pruning prescription require greater than 1/3 of the live crown of the tree to be removed or greater than 1/3 of the overall height of any tree to be removed, the property owner will be notified in writing prior to performing the necessary pruning.

4.5.2 Removals

Owners of trees that require removal for clearance or safety of the electrical facility will be notified by Liberty or authorized contractors in writing prior to removing the tree (see Attachment B - Tree Work Notification Form). Should notification be unattainable, and no other reasonable options exist, Liberty will document all attempts made to contact the property owner and photo document the situation prior to removing the tree (see Attachment C – Contact Attempt Tracking Form)

4.6 Emergency, Immediate, and Accelerated Work

4.6.1 Emergency Work

Emergency work is required to resolve a situation that has seriously compromised the electrical facilities, electric system reliability, and/or forest resources. These situations represent immediate threats to life, public safety, or property. Emergency situations generally result from high winds, storms, wildfires, other natural disasters, or other accidents that damage the electrical lines. Emergency repairs may include replacement of downed poles, re-conductoring segments of line, or pulling new line.

Emergency work will start immediately to correct unsafe conditions and return the electrical facilities to service. Examples of emergency operations include but are not limited to:

- Electrical Outage (Loss of Service) to electrical customers resulting from natural or man-made causes resulting in:
    - Distribution or Transmission Conductor Failure
    - Distribution or Transmission Pole Failure
    - Underground equipment Failure
    - Transformer or Transformer Switch Failure
- Vegetation in direct contact or that can make direct contact in wind or with snow/ice loading with electrical equipment or conductors resulting in electrical faults, arcing, or smoldering vegetation.
- Telecommunications failures resulting in the loss of data collection from smart meter installations.
- Vegetation which has failed or is in the process of failure that will impact and come into direct contact with the electrical equipment.
- Radio communication failures resulting in loss of communications to field operations personnel.

- Hazardous material releases associated with electrical equipment (i.e., transformers) requiring immediate containment and mitigation.
- Broken or damaged structures and equipment that could result in an electrical outage, telecommunications failure, radio communication failure, or hazardous material releases.

See additional information included in VM-05, Vegetation Threat Procedure

4.6.2 Immediate Work

Immediate work is required to resolve a situation that, if not corrected, could cause and outage or the threat to life and property at any time and needs to be immediately rectified.

See additional information included in VM-05, Vegetation Threat Procedure

4.6.3 Accelerated Work

Accelerated work requires the timely corrective action to mitigate an existing condition that at the time of identification represents a potential hazard to life, public safety, or property. Corrective action must be performed to avoid equipment damage or impending equipment failure, or to return equipment to normal operating function. Corrective action is required within 30 days from the date the condition is identified.

See additional information included in VM-05, Vegetation Threat Procedure

4.7 Herbicide and Basel Stump Treatment

4.7.1 Application Methods

Applications of a borax solution (Sporax) shall be applied to all freshly cut conifer stumps measuring 6” diameter and greater to prevent the spread of Annosum root disease. Additional foliar and pre-emergent herbicide applications may be necessary to prevent vegetation growth within substations.

Liberty’s vegetation contractors shall employ a minimum of one person possessing a valid Qualified Applicators License (QAL). This individual shall be responsible for the supervision, application, storage, and reporting pertaining to the use of pesticides/fungicides in compliance with State law.

Herbicide or Fungicide techniques used to control vegetation may include the following:

- Cut Stump (Basal) Treatment

- Foliar Application
- Pre-emergent soil applications

4.8 State Highway and Roadside Management

Many of Liberty high-voltage power line corridors have been established within or directly adjacent to local or state road rights-of-way, therefore resulting in the need for vegetation management activities along heavily travelled roads. To ensure public safety, vegetation management shall be carried out in accordance with the utility's existing encroachment permits in compliance with the appropriate rules set forth in the encroachment permit. Liberty's employees and contractors shall be familiar with and abide by all requirements of Liberty's encroachment permit with the State of California, Department of Transportation; it's General Provisions and Traffic Control Provisions

If emergency or maintenance work needs to be done and it will block road access to emergency vehicles or cause delays for the response of emergency vehicle, Emergency Dispatch must be notified prior to engaging in work activities.

4.8.1 Vegetation Management in Road and Highway Rights-of-Way

Liberty operates and maintains power lines located within the public road rights-of-way by means of Franchise Agreements and easements granted by the operating agency. Due to the sensitive nature of noise and air pollution that may occur from the removal of large amounts of vegetation that provide screening from such nuisances to nearby residences, Liberty shall make every attempt possible to notify the adjacent property owner of the removal of vegetation.

For trees located in the Caltrans right-of-way that require removal, a Caltrans/Electric Utility Tree Removal Request form shall be submitted to and approved by the Caltrans District Landscape Specialist (see Attachment D).

4.9 Public Lands

Liberty's facilities occupy public land, in certain locations, managed by the United States Forest Service, Army Corp of Engineers, California Tahoe Conservancy, State of California, or other government agencies. Care must be taken to ensure that proper notification and permitting of vegetation management activities takes place prior to performing the work. Liberty shall be familiar with the requirements of special permits or authorizations in place and shall abide by the requirements of those authorizations.

5 Other Program Elements

5.1 Abnormal Field Conditions

Inspections that cannot be completed due to inaccessibility or restrictions will be promptly reported to VM personnel.

Any abnormal field conditions of electrical infrastructure that are observed during VM work including but not limited to pole or equipment damage compromising structural integrity of the assets, floating insulators, frayed conductor, leaning poles, leaking transformers, disconnected attachments or anchors, or abnormal conductor sag will be promptly reported to Liberty Dispatch or Operations personnel.

5.2 Inspection Types and Methods

Refer to VM-07, Vegetation Management Inspection Manual

5.3 Quality Control

Refer to VM-04, Post Work Verification Procedure

6 Approvals

Program Manager	Signature	Date
Eric Oiler	Eric F. Oiler	04/11/2025

7 Revision History

Version No.	Revision Date	Revised By	Description of Revisions
1	06/21/2021	Peter Stoltman	Initial release for VM Program Update
2	07/06/2021	Peter Stoltman	Added applicable language from PRC 4295 & 4295.5 to Section 4
3	04/10/2025	Eric Oiler	Updated clean-up specifications, line miles, and other program elements.

8 Distribution and Data Retention

The official version of the document shall be stored in the Vegetation Management Program Document Library in the West General (X:) Vegetation Management Folder while in effect and retained for at least seven (7) years thereafter.

Distribution:

- Wildfire Sr. Manager
- VM Manager
- VM Supervisor
- VM Coordinator
- System Arborist
- System Forester

Hazard Tree Management Plan

VM-03

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Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-03	Liberty
				Version	1.0	
	Effective Date	04/28/2021				
	Supersedes	N/A				
Hazard Tree Management Plan						

1 Introduction

1.1 PURPOSE

The purpose of the Hazard Tree Management Plan (HTMP) is to identify, document, and mitigate trees that are located within the Utility Strike Zone (USZ) and are expected to pose a risk to electric facilities based on the tree's observed structural condition and site considerations.

1.2 ADDITIONAL CONSIDERATIONS

As part of its Vegetation Management (VM) Program, Liberty Utilities (Liberty) manages thousands of trees within and along easements. Given the magnitude, Liberty cannot continuously assess every tree for possible defects. Even under the best circumstances and with the highest standard of care, tree failure cannot be predicted with 100% accuracy. Although Liberty is unable to reasonably foresee all tree failures all the time, by exercising good professional judgment and using a systematic approach such as the one described in this plan, it is possible to significantly reduce the risk of tree failures that can damage electric facilities.

It is not possible to accurately identify or predict all trees that will fail, particularly during Force Majeure Events[1]. These events could include unforeseeable weather events, or failures related to conditions that cannot be observed such as those related to root systems or the inner structure of the tree.

Additionally, Liberty may be hindered from reducing potential tree risks by property owner opposition and limited access to private property. Most trees that pose a potential risk to electric facilities are owned by others, and Liberty may not have the ability to enter properties to conduct assessments and perform mitigation tasks at all times.

2 Applicability

- Transmission (60kV-120kV)
- Distribution
- Vegetation Management

[1] Circumstances that are beyond a utility's control, including natural disasters such as earthquakes, fires, tornados, hurricanes, landslides, wind shear, fresh gale, major storms, ice storms, and floods; human or animal activity such as logging, animal severing tree, vehicle contact with tree, or installation, removal, or digging of vegetation

3 Definitions

Refer to Liberty the VM Glossary of Terms for other capitalized terms used in this document.

- **Hazard Tree** – A tree which is expected to pose a risk to electric facilities based on its structural condition
- **Tree Risk Assessment** – A systematic process used to identify, evaluate and quantify Tree Risk
- **Utility Strike Zone (USZ)** – The area containing electric facilities from which a tree can directly strike electric facilities

4 Detail

4.1 Tree Risk[2]

For the purposes of this HTMP, the concept of risk takes into consideration the potential likelihood of a tree failure, or parts thereof, occurring that can adversely affect Liberty infrastructure, and the severity of the potential consequences.

4.2 Vegetation Management Tree Risk Overview

During the inspection process, tree and site conditions will be assessed to determine tree risk and if work is required to mitigate the identified risk. Inspections to identify Hazard Trees are conducted during routine patrols for compliance and reliability or during a dedicated tree risk assessment inspection.

Trees located within the USZ will be assessed to determine the potential risk to electric facilities. The tree assessment will yield a risk ranking and a priority condition for tree risk mitigation.

A Level 1 Limited Visual Assessment will be performed as part of the inspection process. If Hazard Tree characteristics are identified during the Level 1 assessment, a Level 2 Basic Assessment of the tree will be conducted. The assessment results are captured in Liberty's tree inventory. Appropriate mitigation will be performed when a Hazard Tree is identified.

[2] Additional reference material available in the ISA Publication "Best Management Practices - Utility Tree Risk Assessment" https://www.isa-arbor.com/store/product/4430

4.3 INSPECTIONS

Scheduled Inspections

Liberty performs routine inspections to identify work that is needed to maintain regulatory compliance and to identify and assess trees which can be expected to pose a risk to Liberty facilities. The frequency of these inspections is described in the Vegetation Management Plan (VM-02) and can vary or be modified based on environmental conditions. All Hazard Trees are documented in Liberty's work management system and are scheduled for work based on the level of risk to Liberty facilities.

Unscheduled Inspections

Liberty may perform specific Hazard Tree inspections, as needed, after major storms, high wind events, and fires. The need for these inspections is determined based on the severity of the event and resulting possibility of damaged trees.

Liberty may perform separate pre-fire season inspections in designated Public Resource Code (PRC) areas, Extreme (Tier 3) and Very High (Tier 2) fire areas as needed.

4.4 ASSESSMENT LEVELS, ANSI A300 (PART 9)

Level 1: Limited Visual Assessment

This is accomplished by conducting an assessment from one side of the tree (side nearest the electric facilities) and can be ground-based, vehicle-based, or aerial-based, as appropriate for the site conditions, type of infrastructure, and tree population being considered. A Level 1 assessment focuses on identifying obvious tree defects (i.e., dead branches, leaning) that are observable from the side of the tree nearest the electric facilities. If a condition of concern is identified during the Level 1 assessment, recommendations are developed regarding possible mitigation. If the Level 1 assessment cannot sufficiently determine the severity of the condition, a Level 2 assessment is conducted.

Level 2: Basic Assessment

This is a detailed ground-based visual assessment of an individual tree and its surrounding site. A Level 2 assessment may include walking completely around the tree—looking at the site, buttress roots, trunk, and branches. Many trees that pose a potential risk to electric facilities are located on private property and beyond the edge of the utility easement of right-of-way, which may restrict access. Severe terrain or

other obstacles may also prevent access. As such, there may be a limited opportunity or ingress to do a 360° assessment of an individual tree.

Level 3: Advanced Assessment

This is an assessment of a tree to provide detailed information about specific tree parts, defects, targets, and/or site considerations. Specialized equipment, data collection, and analysis, and expertise could be required.

4.5 TREE RISK ASSESSMENT

Hazard tree attributes and site attributes that indicate possible hazard conditions are listed below. Both hazard tree and site attributes may impact the stability of a tree and should be considered when performing a tree risk assessment. The assessment results are captured in the work management system in order to track and manage the prescribed work or other mitigation.

Hazard Tree Attributes
Basal wound
Bleeding and/or resinous
Bulges and/or swellings
Cankers, including bleeding & gall rust
Cavities
Codominant or multiple stems from base or higher on trunk
Conks indicating heart rot, root rot, sap rot or canker rot
Cracks including shear
Dead branches and/or top
Dieback of twigs and/or branches
Embedded wires or cables
Excessive lean toward electric facilities or excessive bow
Fire damage
Foliage – off-color, flagging or loss
Hazard beam
History of limb failure(s) on tree
Included bark
Insect activity such as frass from termites, bark beetles or carpenter ants
Lightning damage

Hazard Tree Attributes
Live crown ratio below 30%
Mistletoe – dwarf or broad-leaf
Nesting holes – birds, mammals, insects
Dead palm fronds that can dislodge during high winds
Past poor pruning practices
Roots injured, exposed, undermined or uplifted
Seam
Species failure patterns
Unnatural or structurally unsound canopy weight distribution
Weak, unsound branch attachments

Site Attributes
Areas known to be affected by introduced tree pathogens
Areas of recent clearing/new edge
Change in drainage
Change in grade
Construction – including trenching, paving or road construction
Cultural disturbance to landscape - natural or unnatural
Diseased center – dead tree in middle and dying trees around it
High stand density with single species composition
High Winds (fire watch)
History of failure(s) at site
History of repeated outages on circuit
Fire damage
Recent thinning or logging
Slope (by grade or percentage)
Soils prone to slides
Specific conditions like high winds
Storm damage

4.6 WORK PRIORITY LEVELS

Trees that have been identified as a hazard are mitigated based on risk. VM-05, Vegetation Threat Procedure, describes the criteria for work priority determination.

4.7 MITIGATION ACTIONS

Complete Tree Removal

Complete tree removals must meet one of the following criteria:

- The distance between the tree and Liberty's lines or facilities is equal to or less than the height of the tree and the Facility Protect mitigation (see below) is not feasible.
- The tree is expected to pose a risk to electric facilities and shows characteristics that make the tree, or parts thereof, unstable, and the Facility Protect mitigation is not feasible.

Facility Protect

In some situations a complete tree removal may not be required to mitigate the risk the tree poses to electric facilities. If appropriate conditions exist, portions of a tree can be pruned or removed to mitigate the risk.

- The hazard condition is not caused by or exacerbated by site considerations.

Monitoring

Assessed trees may be monitored when they are considered stable and are not expected to pose a risk to electric facilities in the foreseeable future, but show signs of:

- Emerging Hazard Tree attributes
- Changing site considerations

Property Owner - Contractor Assist

Only specially-trained and certified tree crews can work near high-voltage electric facilities, which is defined as within 10-feet. Property owners who hire their own tree workers to prune or remove trees near electric facilities should first notify Liberty.

As part of the VM Program, Liberty will assess and remove portions of trees to a level that would allow workers that are not qualified to work within 10-feet of high-voltage electric facilities to remove or prune the remainder of the tree.

5 Approvals

Program Manager	Signature	Date
Peter Stoltman		04/28/2021

6 Revision History

Version No.	Revision Date	Revised By	Description of Revisions
1.0	04/28/2021	Peter Stoltman	Initial release for VM Program

7 Distribution and Data Retention

The official version of the document shall be stored in the Vegetation Management Program Document Library in the West General (X:) Vegetation Management Folder while in effect and retained for at least seven (7) years thereafter.

Post Work Verification Procedure

VM-04

Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-04	Liberty
				Version	2.0	
	Effective Date	02/28/2025				
	Supersedes	1.0				

Post Work Verification Procedure

Table of Contents

Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-04	Liberty
				Version	2.0	
	Effective Date	02/28/2025				
	Supersedes	1.0				

Post Work Verification Procedure

1 Purpose

The purpose of the Post Work Verification Procedure ("Procedure") is to define the Vegetation Management (VM) program oversight requirements used to provide reasonable assurance Liberty is meeting the applicable requirements pertaining to VM.

Liberty VM maintains and implements a robust scheduling process to meet mandated compliance inspection requirements. Scheduled maintenance work (vegetation inspection, pruning and removal) is performed by contracted resources. This procedure is intended to provide several levels of defense-in-depth strategy to provide reasonable assurance that inspection and maintenance work is being effectively performed.

2 Applicability

- Transmission (60kV-120kV)
- Distribution
- Vegetation Management Program

3 Definitions

Refer to Liberty the VM Glossary of Terms for other capitalized terms used in this document.

- **Acceptable Quality Level (AQL)** – Is the maximum number of nonconforming products considered acceptable in a particular sample size based on business, financial and safety levels
- **Compliance Audit (CA)** – The process of independently evaluating an organization to ensure that internal policies and procedures, external rules, regulations, and laws are being followed.
- **Confidence Level (CL)** – The confidence level is the amount of uncertainty tolerated. The higher the CL, the more certain you are of the results. With a CL of 95%, you would expect an error one in 20 times. With a CL of 99%, you would expect an error one in 100 times.
- **Judgmental Sampling** – is a type of nonrandom sample that is selected based on the opinion of an expert. Results obtained from a judgment sample are subject to some degree of bias, due to the frame and population not being identical.
- **Margin of Error (MoE)** – The margin of error is the amount of error that is tolerated.
- **Population Size** – The total number of items (trees/locations/spans) from which to choose a sample.

- **Quality Control (QC)** – Typically verifies a product by testing a sample of the product against a specification, standards, or other criteria. Quality control measures are aimed at checking, measuring, or inspecting a sample of one or more product characteristics and evaluating the results against requirements to confirm compliance.
- **Quality Assurance (QA)** – Typically assesses a process through analysis of objective evidence that supports the program or process for adherence and/or compliance with specific requirements.
- **Reasonable Assurance** – A high, but not absolute, level of assurance.
- **Sample Size** – This is the minimum recommended size for sampling.

4 Detail

4.1 Personnel Qualifications

ISA Certified Arborist with a minimum of three years of experience in Utility Vegetation Management. Additional credentials such as ISA Certified Utility Specialist and Tree Risk Assessment Qualification are preferred.

4.2 Sampling Methodology

QC inspections for VM are based on judgmental sampling and not 100% inspection. Judgment is used to prioritize QC resource allocation based on risk. The intent of QC inspections is to provide reasonable assurance that high quality work is being performed and meeting program requirements.

The sampling performed for Liberty's VM program will identify nonconforming conditions for those items subject to QC inspection.

4.3 Sample Size for Inspection Priority

Table 1 below applies CL and MoE to Inspection Priority and provides recommended sampling mileage. Liberty will use a sample size of approximately 33% of completed tree work on all lines. Liberty will also use a sample size of approximately 33% of completed detailed inspections on all lines. For Hazard Tree mitigation, 10% inspection is performed of completed work. For Pole Brushing, 12% inspection is performed of completed work.

The QC sampling mileage in Table 1 may be adjusted yearly (higher or lower) to address program improvements/concerns. Changes in the sampling mileage will be identified in the annual Quality Control Inspection Plan (Section 4.8) and may also result in revisions to this document.

Table 1: Sample Size (percentage) and Units

Work Type	Category	Annual Circuit Miles	Annual Hazard Trees[1]	Annual Poles	Statistical Sampling[2]		
					CL/MoE	%	Units
Completed Tree Work[3] [4]	T and D	700	-	-	99/7	33	228 Miles
Detailed Inspection[5]	T and D	220	-	-	N/A	33	73 Miles
Hazard Tree Work[6]	T and D	-	6,000	-	99/5	10	597 Trees
Pole Clearing[7]	T and D	-	-	4,900	99/5	12	584 Poles

Note: Circuit mileage sampled should take into consideration density of vegetation.

4.4 Acceptable Quality Level and Conformance Rate

To provide measurement of performance and facilitate trending, the results of post work verifications and quality control inspections are communicated using an Acceptable Quality Level (AQL) and Conformance Rate (CR).

- An AQL is recommended by VM management and agreed upon by the assessed contractor's management
- The CR is used to assess whether performance is meeting or is below the established AQL
- The CR is determined by the number of nonconforming assets (trees/poles) identified within the circuit mile population compared to the number of

[1] This is an approximate number that could vary significantly from year to year

[2] See Appendix A for underlying calculations

[3] Completed tree work resulting from annual LiDAR inspections and 3-year cycle Detailed Inspections

[4] See Paragraph 4.7.1

[5] See Paragraph 4.7.2

[6] See Paragraph 4.7.3

[7] See Paragraph 4.7.4

assets inspected. An example of how the CR is determined is provided below:

- If 100 assets are inspected in one month and 19 assets are found nonconforming, the CR is 81%. If the AQL for acceptable performance is determined to be 95% CR, then a CR of 81% falls short of the performance expectation by 14%.

Note: Sufficient time is required to establish program maturity that meets VM program expectations. Therefore, establishment of the AQL, scoring criteria and performance trending will occur after sufficient time has passed to allow the program to mature.

4.5 Defense in Depth Oversight Strategy

VM work primarily consists of: (1) inspection; (2) line clearance maintenance; (3) hazard tree mitigation; and (4) pole brushing. To provide reasonable assurance the Liberty VM program is functioning at a high level of compliance, Liberty is implementing an oversight strategy which includes:

- Post Work Verification
- Quality Control Inspections
- Compliance Audit

Post Work Verifications are performed by Liberty and are the initial reviews to confirm project completion. Volume of documentation review and field work is recommended in Section 4.6.

Quality Control Inspections are performed by appropriately trained and qualified entities whose function, and organizational reporting is independent of the VM organization. Quality Control Inspections are performed using judgmental sampling with emphasis on an assigned inspection priority level and are intended to provide reasonable assurance of compliance. Details are provided in Section 4.7.

Compliance Audits are performed by appropriately trained and qualified entities whose function, and organizational reporting is independent of the VM organization. Compliance Audits are performed to monitor the effectiveness of the Liberty VM program. Program effectiveness is measured by field sampling a statistically valid number of locations to provide an objective Compliance Rate. Details are provided in Section 4.8.

4.6 Post Work Verifications – Performed by Liberty

4.6.1 Post Work Documentation Review – Desktop Review

Post Work Documentation Review is performed as follows:

- 100% of submitted work documents are reviewed for accuracy
- After satisfactory review, the work process is approved in Liberty's work management system
    - Errors identified through the review process, are communicated to the contractor, as applicable
    - Documentation errors are communicated back to the contractor for correction

4.6.2 Post Work Validation – Field Review

Post Work Field Validation is performed by Liberty System Arborists as part of their day to day duties. Field work is reviewed for adherence to work specifications, industry standards, and regulatory requirements. Any work that is determined to be unsatisfactory is reported to the contractor to be corrected.

- Errors identified through the field validation/review process, are communicated to the responsible work crew foreman, as applicable
- Inadequate work is remediated and objective evidence to support remediation is provided to Liberty VM personnel.

If unsatisfactory work reported to VM contractors after review fails to yield satisfactory performance, additional controls maybe added to correct performance deficiencies.

4.6.3 Post QC Work Validation – Field Review

A Post QC Field Validation is performed on an as-needed basis to confirm contractor QC inspections are being performed as described in Paragraph 4.7.

4.7 Quality Control Inspections – Performed by QC Inspection Contractor

4.7.1 Tree Pruning and Removal

- All transmission and distribution circuits shall be inspected as follows:
    - 33% of total system miles (see Table 1)
    - If significant inspection criteria violations are identified, the QC inspector (or their representative) must provide timely notification to Liberty Vegetation Management

- QC inspection criteria includes but is not limited to the following:
  - Work was performed to specifications detailed in the scope of work
  - MCD was achieved or work was completed as otherwise described in the work prescription
  - Slash and debris removal was satisfactory as required by Liberty's specification and applicable regulations
  - Complete and accurate documentation of work performed
  - Pruning was completed per ANSI standard
- Work found not performed to specifications are provided to Liberty Vegetation Management to determine if rework is required by the contractor. Once it has been reworked by the contractor, it should be verified by QC contractor as requested by Liberty.

4.7.2 Detailed Inspections

- All inspected work shall be reviewed as follows:
  - 33% of annual circuit miles (see Table 1)
  - Next annual QC inspection should not encompass the same circuit mileage sample
- QC inspection criteria includes but is not limited to the following:
  - Site location and access information are documented and accurate
  - Complete and accurate inventory (e.g., species, all other attributes as required)
  - Appropriate vegetation threat characteristics and mitigation timelines are prescribed
  - Appropriate Work Categories are assigned for Pruning, Removal, and Facility Protect (see Paragraph 'a' below)
  - Notifications are documented
  -
  - Description of slash and debris handling was provided

4.7.3 Hazard Trees

- For the purpose of selecting a sample, the population of Hazard Trees, as defined in VM-03, is comprised of trees that have been removed. To determine the annual population for sampling, a three-year average (2021-2023) was used to estimate 6,000 hazard tree removals each year.

- All hazard tree work shall be inspected as follows:
  - 10% of completed work (see Table 1)
- Hazard Trees will be inspected for the following criteria:
  - Prescription was completed (i.e., monitor, facility protect, remove)
  - Slash and debris removal was satisfactory as required by Liberty's specification and applicable regulations
  - Mitigation did not adversely impact other trees (e.g., adjacent trees exposed to windthrow, etc.)
  - Site conditions are stable after the completion of work

4.7.4 Pole Clearing

- All pole clearing work shall be inspected as follows:
  - 12% of poles with non-exempt equipment (see Table 1)
  - If significant inspection criteria violations are identified, the QC inspector (or their representative) must provide timely notification to Liberty Vegetation Management
- Poles that require brushing (subject poles) will be inspected for the following criteria:
  - Work was completed as required by Public Resource Code (PRC) 4292
  - Slash and debris removal was satisfactory as required by Liberty's specification and applicable regulations
  - ANSI standards were met if pruning was required

4.7.5 QC Planning, Inspection, and Reporting

- The VM Manager is responsible for selecting the circuit mileage to be inspected
- QC inspections are assigned to the QC contractor by Liberty Vegetation Management upon work completion or completion of a reasonable work sample size prior to the planned QC inspection
- QC inspections shall be performed within 60 days of QC work assignment or as reasonably requested by Liberty Vegetation Management
- QC inspection reports shall be provided to Liberty Vegetation Management for review in a timely manner and not to exceed 10 days after the QC work was completed

- If significant conditions are identified that require immediate attention, the QC contractor shall notify the applicable System Arborist
- Performance feedback is provided to the appropriate contractor by Liberty Vegetation Management to remediate noted deficiencies

- Reworked conditions are verified for completion
- QC inspection reports are filed in the West General X:Vegetation Management Folder

4.7.6 Inventory Reconciliation

If issues are identified with inventory, the issues shall be reconciled, and appropriate records updated in the inventory system of records.

4.8 Compliance Audits

A CA is a statistically valid field review of OH distribution and transmission lines for adherence to regulation clearance requirements.

- CAs are a field review performed by a QC inspection contractor.
- CAs use industry accepted protocols and calculations to determine a statistically valid sample sizes to be reviewed for both distribution and transmission line miles as part of the QC process.
- A statistically valid sample size of these spans are randomized for selection of the CAs and the tree population size at each sample location is recorded to determine the compliance and conformance rate.
- CA parameters will stay consistent to compare results year-to-year.

4.9 Annual Plans

Annual QC inspection and CA plans are required to identify the planned inspections and audits that will be performed during the calendar year.

Scope identified in the plans may be adjusted to account for any unforeseen schedule issues if the minimum sampling volume is maintained.

The plans should be developed in the 4th quarter of the year preceding the inspection year.

The plans shall be approved by the VM Manager.

5 Approvals

Approved By:	Signature	Date
Eric Oiler, Manager, Vegetation Management	Eric F. Oiler	02/28/2025

6 Revision History

Version No.	Revision Date	Revised By	Description of Revisions
1.0	05/21/2021	Peter Stoltman	Initial release for VM Program
2.0	02/28/2025	Eric Oiler	Updates to sample size table and added Compliance Audits

7 Distribution and Data Retention

The official version of the document shall be stored in the Vegetation Management Program Document Library in the West General (X:) Vegetation Management Folder while in effect and retained for at least seven (7) years thereafter.

Distribution:

- Wildfire Sr. Manager
- VM Manager
- VM Program Administrator
- VM Supervisor
- VM Coordinator
- System Arborist

Appendix A

Sample Size Calculation Example

Common Confidence Levels:

CL	Z-Score
99%	2.576
95%	1.96
90%	1.645

Standard Deviation (Std Dev): 50% *Remains Constant*

Margin of Error (MoE): 5% *Can Vary 1-10%*

Population Size: 2,500

Sample - Underlying Calculations:

$$\text{Sample Size} = \frac{[\text{Z-Score}^2 \times \text{Standard Deviation} \times (1 - \text{Standard Deviation}) / \text{Margin of Error}^2]}{[(\text{Z-Score2} \times \text{Standard Deviation} \times (1 - \text{Standard Deviation}) / \text{Margin of Error2} \times \text{Population Size})) + 1]}$$

$$\text{Sample Size} = [2.576^2 \times 0.5 \times (1 - 0.5) / 0.05^2] / [(2.576^2 \times 0.5 \times (1 - 0.5) / 0.05^2 \times 2500)) + 1]$$

$$\text{Sample Size} = 663.578 / 1.2654$$

Sample Size = 524

Vegetation Threat Procedure

VM-05

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Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-05	Liberty
				Version	2.0	
	Effective Date	6/3/2022				
	Supersedes	Version 1.0				
Vegetation Threat Procedure						

1 Purpose

The Vegetation Threat Procedure identifies the methods of prioritization for identified threats on the Liberty system that are discovered through implementation of the Vegetation Management (VM) Program's Hazard Tree Management Plan (VM-03) and Vegetation Management Plan (VM-02). Identified vegetation threats to public safety and/or electric system reliability are mitigated in accordance with this procedure. Qualified Observers should identify potential vegetation threats and follow this procedure to ensure the appropriate mitigation action(s) are taken.

2 Applicability

- Transmission (60kV-120kV)
- Distribution
- Vegetation Management

3 Definitions

Refer to Liberty the VM Glossary of Terms for other capitalized terms used in this document.

- **Qualified Observer** – A Liberty employee or Liberty contractor in the VM department who has obtained, through training or experience, the ability to accurately identify vegetation threats and how to secure the area for public safety.

4 Detail

4.1 Vegetation Threat Process

Vegetation threats are categorized by their ability to impact the electrical system by a.) encroaching within clearance distances specified in Table 1 ("Grow-in") or b.) failing and striking utility infrastructure ("Fall-in"). Once identified, vegetation threats are prioritized by their likelihood of impacting the system within a given timeframe. When a Qualified Observer identifies a vegetation condition described in Section 4.2, the Vegetation Threat Procedure steps described in detail in Section 4.4 shall be followed.

4.2 Vegetation Threat Criteria and Mitigation Schedule[1]

4.2.1 Potential Tree or Limb Failures

Priority 1 Conditions

- Any observed tree, or parts thereof, that is failing or expected to imminently fail and contact electric facilities
- Any observed tree, or parts thereof, where it appears that contact has occurred with electric facilities

P1 Mitigation

- Clear the threat within 24-hours

Priority 2 Conditions

- Any observed tree, or parts thereof, that is not a Priority 1 condition but is likely to fail and impact electric facilities prior to issuing a planned maintenance work order (failure may be expected within 6 months)

P2 Mitigation

- Clear the threat within 30-days

Priority 3 Conditions

- Any observed tree, or parts thereof, that is not a Priority 1 or Priority 2 condition but there is a probability of failure and contact with electric facilities within 2 years

P3 Mitigation

- Add to the tree inventory for creating and scheduling a planned maintenance work order
- The threat shall be re-assessed or mitigated within 9 months

Priority 4 Conditions

- Any observed tree, or parts thereof, that is not considered a Priority 1, Priority 2, or Priority 3 condition, is currently stable, may be in decline or defective, but is not expected to fail and contact electric facilities

[1] Clearance Exempt Trees, as defined in GO95, Rule 35 and Title 14, Section 1257, are not to be included as a priority condition and are excluded from mitigation.

P4 Mitigation

- Add to the tree inventory for future monitoring

4.2.2 Potential Tree Growth Encroachments

Priority 1 Conditions

- Any observed vegetation condition, resulting from tree growth or tree sway, where it appears that contact has occurred with electric facilities

P1 Mitigation

- Clear to the MCD within 24-hours

Priority 2 Conditions

- Any observed vegetation condition, resulting from tree growth, that is not a Priority 1 but is within the Regulation Clearance Distance (see Table 1)

P2 Mitigation

- Clear to the MCD within 30-days

Priority 3 Conditions

- Any observed vegetation condition, resulting from tree growth, that is not a Priority 1 or Priority 2 condition but requires work prior to the next inspection (12 to 18-months) to maintain the Regulation Clearance Distance (see Table 1)

P3 Mitigation

- Clear to the MCD no later than 9-months from initial inspection

Table 1

Voltage	Regulation Clearance Distance **RCD**	Maintenance Clearance Distance - Minimum **MCD**
14.4kV	4’	12’ – 15’
60kV	4’	12’ – 15’
120kV	10’	30’ – 35’

4.3 Vegetation Threat Mitigation Steps
Evaluation and Categorization of Vegetation Threat

- If a potential vegetation threat is identified, the Qualified Observer will evaluate and categorize the threat as either Priority 1, 2, 3, or 4 in accordance with Section 4.2
- To properly categorize the Vegetation Threat, the Qualified Observer should use good professional judgement when determining if the threat is a P1, P2, P3, or P4, and should consider the following :
    - Is the vegetation above the line?
        - Consider factors that would cause the vegetation to contact the line (snow/ice, rain, etc.)
    - Is the vegetation below the line?
        - Consider factors that would cause the vegetation to contact the line (heat, line loading, etc.)
    - Is the vegetation adjacent to the line?
        - Consider factors that would cause the vegetation to contact the line (wind, line loading)
- If determined to a Priority 1 condition, the Qualified Observer shall:
    - Secure the area for public safety
    - Remain on-site until the condition is corrected or until relieved by an authorized Liberty representative
    - Perform notification protocol

4.4 Notification Protocol
Notify Liberty emergency personnel at 1-844-245-6868

Notify the Liberty System Arborist or authorized representative

5 Approvals

Program Manager	Signature	Date
Peter Stoltman		6/3/2022

6 Distribution and Data Retention

The official version of the document shall be stored in the Vegetation Management Program Document Library in the West General (X:) Vegetation Management Folder while in effect and retained for at least seven (7) years thereafter.

Distribution:

- Vegetation Management Managers, Supervisor, and employees
- Vegetation Management Contractors
    - Vegetation Inspectors
    - Line Clearance Tree Crews
    - Quality Control Inspectors
    - Pole clearing crews

7 Revision History

Version No.	Revision Date	Revised By	Description of Revisions
1.0	05/21/2021	Peter Stoltman	Initial release for VM Program
2.0	6/03/2022	Peter Stoltman	Additional language for different considerations for grow-in and fall-in threats as well as timeframe for assessing hazard tree risk; moved revision history to end of document after.

Vegetation Management Notification and Refusal Resolution Policy

VM-06

Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-06	Liberty
				Version	1	
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	Supersedes	N/A				

Vegetation Management Notification and Refusal Resolution Policy

Table of Contents

Liberty CalPeco	Legal, Regulatory, and Compliance	Transmission & Distribution Vegetation Management Program	Methodology	Doc. No.	VM-06	
				Version	1	
	Effective Date	01/01/2024				
	Supersedes	N/A				

Vegetation Management Notification and Refusal Resolution Policy

1 Introduction

Liberty strives to balance the values and benefits of vegetation along with the safety and reliability of the electric grid. Vegetation management activities along the utility corridor are necessary for compliance with California State laws, to maintain public safety and to provide a reliable electric supply. Liberty's Vegetation Management (VM) Program carries out all vegetation management activities in a way that both minimizes risk to electric infrastructure and maintains a high level of customer service. It is the priority of Liberty to avoid any disruption in electric service, due to vegetation, in a way that emphasizes excellent customer relations.

Purpose

The purpose of the Vegetation Management Notification and Refusal Resolution Policy is to provide guidance on interfacing with property owners including communication and notification processes, management of refusal scenarios, and the documentation of these processes through the lifecycle of identification and mitigation of required VM work.

2 Applicability

- Transmission (60kV-120kV)
- Distribution
- Vegetation Management Program

3 Definitions

Refer to the Liberty VM Glossary of Terms for other capitalized terms used in this document.

4 Policy Detail

4.1 Notification and Communications Overview

Liberty determines what VM work is needed on its circuits on an annual basis. Subsequently, VM inspections and tree work will occur on public and private lands. Liberty strives to align resulting VM work with the expectation of its customers and landowners by establishing guidelines for communication and notification processes, on both public and private land.

4.1.1 Pruning

In most cases permission to prune trees that are encroaching on electric facilities is not required should the pruning be required for the utility to maintain compliance with

regulatory requirements. Liberty or its contractors will make reasonable efforts to notify property owners of scheduled tree pruning.

Certain trees require more aggressive pruning to maintain safety and electric reliability. Should the pruning prescription require greater than 1/3 of the live crown of the tree to be removed or greater than 1/3 of the overall height of any tree to be reduced, the property owner will be notified in writing prior to performing the necessary pruning.

4.1.2 Removals

Owners of trees that require removal for clearance or safety of the electrical facility will be notified by Liberty or authorized contractors in writing prior to removing the tree (see Attachment A – Notice of Intent Letter and Attachment B – Tree Work Notification Form). Should notification be unattainable, and no other reasonable options exist, Liberty will document all attempts made to contact the property owner and photo document the situation prior to removing the tree (see Attachment C – Contact Attempt Tracking Form). Section 4.2 details the Contact Attempt Process.

4.1.3 Public Lands

Liberty's facilities occupy public land, in certain locations, managed by the United States Forest Service, Army Corp of Engineers, California Tahoe Conservancy, State of California, or other government agencies. Liberty shall be familiar with the requirements of special permits or authorizations in place and shall abide by the requirements of those authorizations.

4.1.4 State Highway and Roadside Management

Some Liberty high-voltage power line corridors have been established within or directly adjacent to local or state road rights-of-way, therefore resulting in the need for vegetation management activities along heavily travelled roads. For public safety, vegetation management shall be carried out in accordance with the utility's existing encroachment permits in compliance with the appropriate rules set forth in the encroachment permit. Liberty's employees and contractors shall be familiar with and abide by all requirements of Liberty's encroachment permit with the State of California, Department of Transportation; it's General Provisions and Traffic Control Provisions

If emergency or maintenance work needs to be done and it will block road access to emergency vehicles or cause delays for the response of emergency vehicle, Emergency Dispatch must be notified prior to engaging in work activities.

4.1.5 Vegetation Management in Road and Highway Rights-of-Way

Liberty operates and maintains power lines located within the public road rights-of- way by means of Franchise Agreements and easements granted by the operating agency. When working in public road rights-of-way, Liberty shall make a reasonable attempt possible to notify adjacent property owners of the removal of vegetation. For trees located in the Caltrans right-of-way that require removal, a Caltrans/Electric Utility Tree Removal Request form shall be submitted to and approved by the Caltrans District Landscape Specialist (see Attachment D).

4.2 Notification Protocols for Vegetation Inspections & Maintenance

4.2.1 Initial Contact

Initial contact with the customer offers a distinct opportunity and first step in developing property owner confidence in the outcome of VM activities and the initiation of a timeline to complete the necessary work. As a courtesy, Liberty VM employees and contractors shall attempt to notify residential and commercial customers of their presence and the planned work prior to conducting work on the property.

4.2.2 Notification Following VM Inspections

Reasonable efforts shall be made to notify the customer in person at time of inspection to explain planned vegetation management activities. VM personnel performing inspections shall leave a doorhanger notifying of any planned tree work identified if the customer is not present at the time of inspection. A doorhanger notification is considered sufficient to notify a customer of planned pruning or minor work.[1]

4.2.3 Written Notification for Major Work or Removals

If in-person contact was unattainable at time of inspection, additional efforts shall be made to provide notification for trees requiring major work or removal on private property. This process usually entails researching property owner contact information including phone numbers, email addresses, and mailing addresses utilizing historical VM records, property owner databases, and county parcel data. Contracted VM inspectors should request property owner data from Liberty VM if it is unavailable to them through software or databases the contractor is allowed to access.

Should notification with the property owner be unattainable after additional attempts to contact, the NOI letter and TWNF shall be mailed to the current recorded mailing

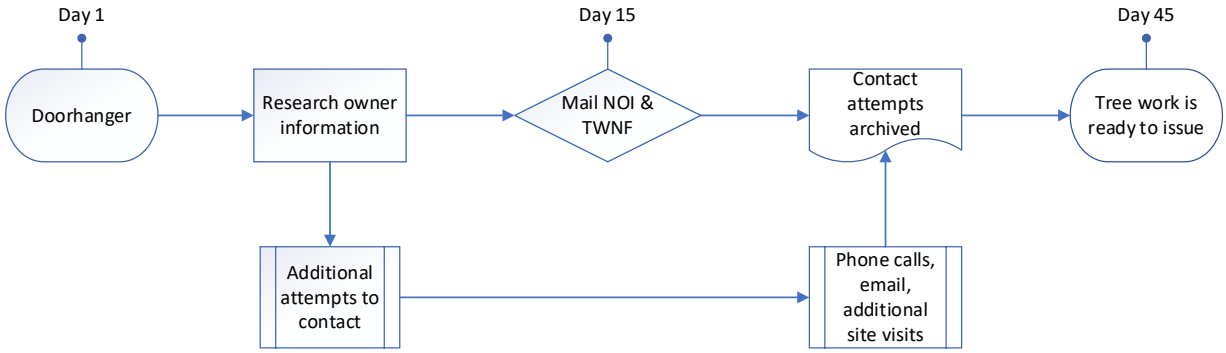
[1] A doorhanger notification is not required for vacant lots with absentee property owners.

address of the property owner no later than 15 days after the inspection and documented.

4.2.4 Documenting Contact Attempts and Tree Work Ready to Issue

If no response from the property owner is returned within 30 days after the written notification is mailed, and 45 days after the inspection, all contact attempts and photo(s) of the tree condition and its vicinity to electric lines shall be documented and archived. Contact attempts and photos shall be documented on the Contact Attempt Tracking Form and VM software for Liberty VM to review. After verification by Liberty VM that due diligence was made to notify the property owner of the required tree work the work order will be updated to a "ready to issue" status. See Figure 1, Contact Attempt Tracking Process.

Figure 1. Contact Attempt Tracking Process



4.2.5 Notification Following VM Work

Vegetation crews performing work shall verify written notification is recorded for major work or tree removals and follow any special requests on the work order, such as a 24-hour notice, prior to performing the tree work. Vegetation crews should leave a doorhanger notifying of work upon completion if the property owner is not present at time of work.[1]

4.2.6 Notifications for Accelerated, Immediate, and Emergency Work

Liberty's VM-05, Vegetation Threat Procedure, establishes methods of prioritization and mitigation schedules of identified threats on the Liberty system (see Table 1). When Liberty or an authorized contractor identifies Priority 1 (P1) or Priority 2 (P2) vegetation

conditions which threaten electrical facilities, it shall be reported to Liberty VM or authorized representative and mitigated according to VM-05 guidelines.

Notification to the customer or owner regarding the required mitigation for P1 or P2 conditions should be attempted as soon as reasonably possible. If in-person contact is not possible and there are no other means to contact, a doorhanger notification shall be made. Liberty or the authorized contractor should document the notification attempts and include photographic evidence of the vegetation threat on VM software when reasonably possible.

Liberty shall be familiar with the requirements of special permits and authorizations in place for public lands and follow the notification requirements for accelerated, immediate, and emergency work detailed in those authorizations.

Documentation of notification attempts during storms or major events may not be possible.

Table 1: Priority Type and Mitigation Schedules

Priority Type	Timeframe to Complete Work
P1	24 hours
P2	30 days
P3	Clear with 9 months
P4	Evaluated at next scheduled inspection

4.3 Refusal Process

Vegetation management work is necessary to comply with the following state laws and regulations:

- General Order 95, Rule 35
- Public Resource Code (PRC) 4292
- PRC 4293
- PRC 4293 and GO 95, Rule 35 Clearance Exempt Trees
- PRC 4295.5 Right of Entry
- Applicable California Code of Regulations (CCR), Title 14

The California State laws, regulations and guidelines are available to all employees to refer to as well as to provide to property owners when needed. Every contractor and employee shall be familiar with the applicable laws and regulations.

At any point during VM work planning and VM work implementation, misunderstanding regarding work expectations between the customer and VM representatives can occur.

Any scenario during notification or communication to customers that either prevents or causes a delay in vegetation management work that is identified to comply with required laws and regulations, is considered a refusal.

4.3.1 Initial Refusal

Liberty VM field personnel are usually the first to encounter property owners who prevent or cause a delay in scheduling and performing required vegetation management work. Field personnel should make every effort to communicate the importance of their required work function and to develop an understanding of the work with the customer. If Liberty employees or contractors are unable to perform their job function due to customer opposition or no reasonable access, the refusal shall be documented in the VM system and on the Refusal Form document. If possible, the vegetation condition and vicinity to facilities should be photographed for reference and record keeping.

Reasonable efforts shall be made to reach an understanding with the customer to facilitate the required work. Any contact or attempt made to resolve the refusal shall be documented by the employee initiating resolution. Liberty's VM contractors may need to consult with Liberty for support if resolution is unattainable or for approval if there is a request outside of the normal scope of work that would facilitate completing work.

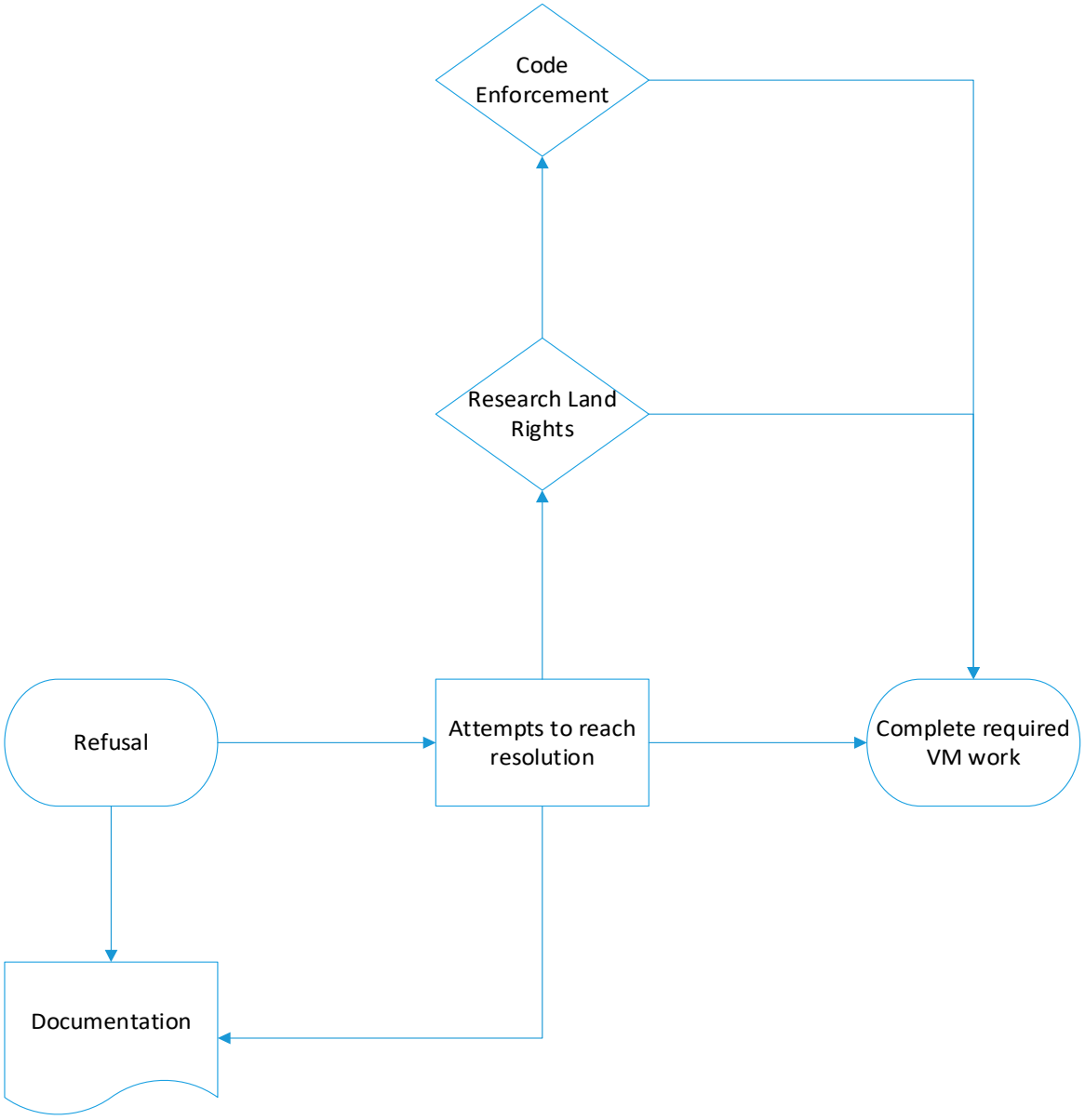
4.3.2 Land and Easement Rights

Should attempts to reach a resolution with the refusing party be unsuccessful, Liberty shall verify existing land or easement rights to be able to perform vegetation work. Liberty should attempt to exercise land and easement rights to perform the required work within the appropriate mitigation timeline.

4.3.3 Law Enforcement Notification

Liberty may be required to involve jurisdictional law enforcement to help facilitate completing the work required to comply with applicable laws and regulations. Law enforcement should be notified, or their presence requested for code enforcement, to facilitate gaining access or completing necessary vegetation management work. Liberty shall notify its Legal Department and Corporate Security team to advise on all hostile property owners and take the necessary legal action to facilitate completing required work within the appropriate mitigation timeline.

Figure 2: Refusal Process



4 Approvals

Program Manager	Signature	Date
Eric Oiler	Eric F. Oiler	01/01/2024

5 Revision History

Version No.	Revision Date	Revised By	Description of Revisions
1	01/01/2024	Eric Oiler	Initial release for VM Program

6 Distribution and Data Retention

The official version of the document shall be stored in the Vegetation Management Program Document Library in the West General (X:) Vegetation Management Folder while in effect and retained for at least seven (7) years thereafter.

Distribution:

- Wildfire Prevention Sr. Manager
- VM Manager
- VM Supervisor
- VM Coordinator
- System Arborist

Vegetation Management Inspection Manual

VM-07

TABLE OF CONTENTS

Vegetation Management Inspection Manual

1 Introduction

Vegetation Management (VM) is necessary to maintain safe and reliable electric service. Local, state, and federal regulations related to vegetation management define the requirements of Liberty as an investor-owned electric utility. The Vegetation Management Inspection Manual provides vegetation inspection companies and its employees details on how to conduct VM inspections at Liberty.

Liberty manages vegetation along approximately 700 miles of high voltage overhead electric facilities located in portions of seven counties in California. The service territory generally encompasses the western portions of the Lake Tahoe Basin. Over 90% of its service territory is designated by the State of California as high fire risk areas, and vegetation management is an essential component of Liberty's Wildfire Mitigation Plan.

1.1 Purpose

Liberty maintains reliable electric Transmission and Distribution systems by inspecting and managing vegetation located under and adjacent to electric conductors to minimize the risk of tree failures striking utility infrastructure and vegetation encroachments into the specified clearance zones.

1.2 Objectives

The Liberty Vegetation Management Inspection Manual is designed to provide inspection companies and its employees an overview of the vegetation inspection processes and responsibilities.

1.3 Regulations

Liberty is obligated to comply with regulatory requirements established by the California Public Utilities Commission (CPUC) General Order (GO) 95, California Public Resource Codes (PRC), and Title 14 California Code of Regulations (CCR) by establishing maintenance and inspection procedures to:

- Manage vegetation to prevent vegetation encroachment into the clearance zones under normal conditions as stated in the following regulations, as

applicable. During Force Majeure[1] events it may not be possible to ensure that an encroachment into the clearance zones will not occur.

- Vegetation related regulations include:
  - GO 95, Rule 35 (Case 13 and Case 14)
  - PRC Section 4292
  - PRC Section 4293
  - CCR Sections 1250-1258
- A detailed description of each regulation and other requirements are contained in Liberty's Vegetation Management Plan (VM-02).

1.4 Plans and Procedures

Liberty has developed and implemented vegetation management plans, policies, and procedures. It is incumbent that vegetation management personnel performing inspections are familiar with these.

2 Applicability

- Transmission (60kV-120kV) (T)
- Distribution (D)
- Vegetation Management Program

3 Definitions

Refer to the Liberty VM Glossary of Terms for other capitalized terms used in this document.

4 Job Responsibilities

4.1 Liberty System Arborist

This position is responsible for planning, implementation, monitoring, and oversight of vegetation inspections and maintenance projects. The system arborist tracks project

[1] Circumstances that are beyond a utility's control, including natural disasters such as earthquakes, fires, tornados, hurricanes, landslides, wind shear, fresh gale, major storms, ice storms, and floods; human or animal activity such as logging, animal severing tree, vehicle contact with tree, or installation, removal, or digging of vegetation.

progress to adhere to workplan schedules, maintains data, creates reports for agencies, communicates with stakeholders, and assists in the quality assurance and quality control of the program.

4.2 Contract Inspection Supervisor

4.2.1 Basic Responsibilities

The Supervisor shall provide adequate supervision to contracted employees at all times. Contractor's Supervisor shall verify contracted employees' work to confirm quality and conformance with Liberty's vegetation management plan and applicable State regulations.

4.3 Contract Utility Arborists

The minimum qualifications for contract Utility Arborists are as follows:

Contract Utility Arborist I – Less than one year of experience in utility arboriculture. This is an entry level contract position that will be mentored/trained by a Contract Utility Arborist II or higher classification. Minimum requirements for this position will be developed by the Contractor and be presented to Liberty's Program Manager for approval.

Contract Utility Arborist II – One or more years' experience in utility arboriculture. This position shall be in training and actively working toward certification as an International Society of Arboriculture (ISA) Certified Arborist or working toward a registration from the State of California as a Registered Professional Forester. Knowledge of utility line clearance concepts, familiarity with tree growth rates, and excellent interpersonal skills are required.

Contract Utility Arborist III – A minimum of two years' experience in utility arboriculture and is an ISA Certified Arborist or Registered Professional Forester. Knowledge of utility line clearance concepts, familiarity with tree growth rates, and excellent interpersonal skills are required.

Contract Utility Arborist IV – A minimum of three years' experience in utility arboriculture and is an ISA Certified Arborist or Registered Professional Forester. An ISA Certified Utility Specialist is preferred but not required. Advanced knowledge of utility

line clearance concepts, capable of overseeing/managing projects as assigned, ability to manage, supervise, and communicate with excellent interpersonal skills.

Contract Utility Arborist V – A minimum of five years' experience in utility arboriculture and is an ISA Certified Arborist and ISA Certified Utility Specialist or Registered Professional Forester. Advanced knowledge of utility line clearance concepts, capable of overseeing/managing projects as assigned, demonstrated ability to manage, supervise, and communicate with excellent interpersonal skills.

4.3.1 Basic Responsibilities

A Utility Forester is responsible for notifying property owners of work to be performed, inspecting vegetation in advance of work, documenting information for the vegetation management program, and obtaining necessary permits from public agencies

4.3.2 Genral Duties

- Inspect individual jobs in the field to determine work to be completed (e.g., number of units, pruning and removal prescriptions, etc.), estimated time to complete the work, and collect other pertinent information as required by Liberty
- Maintain direct contact with Liberty System Arborist
- Assist with conflict resolution during tree work and assist with coordination to complete work orders as needed
- Maintain working relationship with all public agencies
- Responsible for timely resolution of customer complaints
- Other work as directed by the Liberty System Arborist

4.4 Line Clearance Supervisor

4.4.1 Basic Responsibilities

Contractor's Line Clearance Supervisor shall manage the general workflow of the tree crews, ensure quality of contracted tree crew work, and correspond with the Liberty representative as necessary.

4.5 Quality Control (QC) Team

4.5.1 Basic Responsibilities

QC Inspections are performed by appropriately trained and qualified Contractors. QC Inspections are performed using judgmental sampling with emphasis on an assigned inspection priority level and are intended to provide reasonable assurance of compliance with Liberty's Vegetation Management specifications and applicable regulations.

5 Operations Processes

5.1 Vegetation Inspection

5.1.1 Inspection Types

5.1.1.1 Routine Inspections (T&D)

Liberty conducts vegetation inspections of applicable lines, poles and equipment to identify:

- Vegetation management work needed to maintain compliance with applicable regulations
- Potential Required Clearance Distance (RCD) encroachments
- Hazard Trees, see VM-03, Hazard Tree Management Plan
- Clearance Exempt Trees

5.1.1.2 High-Risk, Off-Cycle, Post-Event Patrol (T&D)

Liberty conducts additional inspections, as needed, based on environmental conditions or other factors. Liberty may perform additional hazard tree inspections, as needed, to address tree mortality or after major storms, high wind events, or fires. The need for these inspections is determined based on the severity of the event and the resulting possibility of damaged trees. Liberty may perform separate pre-fire season inspections in designated Public Resource Code ("PRC") areas, Extreme (Tier 3) and Very High (Tier 2) fire areas as needed.

5.1.1.3 Pole Brushing (T&D)

Liberty conducts pole brushing inspections on all non-exempt poles in state and federal responsibility areas annually. Inspections are performed to assess compliance with regulations and document any work that is required.

5.1.1.4 Weed & Brush Control Inspections (Substations)

Liberty conducts routine inspections, vegetation management, and other maintenance activities at 12 substations. Inspections determine control methods, which include manual and mechanical clearing and chemical applications. Work will occur at regular intervals to maintain accessibility, safety, and adherence to appropriate governmental regulations and Liberty policies. A minimum of two site visits will occur per facility, per year. Additional site visits may be required for sites that do not receive herbicide applications.

5.1.1.5 Quality Assurance/Quality Control (QA/QC) Inspections (T&D, Substations)

Refer to Liberty's Post Work Verification Procedure (VM-04).

5.1.1.6 Supplemental Inspections (T&D, Substations)

Supplemental inspections are performed by qualified Distribution Operations personnel throughout the year. Identified conditions requiring vegetation-related work are documented and reported to the VM personnel and scheduled for remediation.

5.1.2 Inspection Methods

5.1.2.1 Remote Sensing

System-wide inspections using Light Detection & Ranging (LiDAR) technology are completed on an annual basis to maintain compliance with applicable vegetation to conductor clearance regulations and identify encroachments.

5.1.2.2 Ground-Based Inspections

Ground inspections of entire circuits or line segments are performed to prescribe pruning and removal of vegetation as a safeguard against grow-ins or fall-ins and to conform to required laws and regulations. Ground based inspections account for vegetation growth rates, vegetation conditions, site characteristics, environmental conditions, and other factors.

Identification of trees posing a high-risk of failure or encroachment are typically performed by completing ground-based ANSI A300 Part 9 Level 1 or Level 2 Tree Risk Assessments.

5.1.2.3 Assessment Levels, ANSI A300 (Part 9)

Level 1: Limited Visual Assessment

This is accomplished by conducting an assessment from one side of the tree (side nearest the electric facilities) and can be ground-based, vehicle-based, or aerial-based, as appropriate for the site conditions, type of infrastructure, and tree population being considered. A Level 1 assessment focuses on identifying obvious tree defects (i.e., dead branches, leaning) that are observable from the side of the tree nearest the electric facilities. If a condition of concern is identified during the Level 1 assessment, recommendations are developed regarding possible mitigation. If the Level 1 assessment cannot sufficiently determine the severity of the condition, a Level 2 assessment is conducted.

Level 2: Basic Assessment

This is a detailed ground-based visual assessment of an individual tree and its surrounding site. A Level 2 assessment may include walking completely around the tree—looking at the site, buttress roots, trunk, and branches. Many trees that pose a potential risk to electric facilities are located on private property and beyond the edge of the utility easement of right-of-way, which may restrict access. Severe terrain or other obstacles may also prevent access. As such, there may be a

limited opportunity or ingress to do a 360° assessment of an individual tree.

Level 3: Advanced Assessment

This is an assessment of a tree to provide detailed information about specific tree parts, defects, targets, and/or site considerations. Specialized equipment, data collection, and analysis, and expertise could be required.

Table 1: Vegetation Management Inspection Frequency, Method, and Criteria

Type	Inspection Program	Frequency or Trigger	Method of Inspection	Applicable VM Plans & Procedures	Governing Standards & Operating Procedures
Transmission & Distribution	Routine	Annual – all circuits	Remote sensing (LiDAR)	VM-02, VM-03, VM-05, VM-07	G.O. 95, Rule 35 (Case 13 and Case 14); PRC § 4293; PRC § 4295; CCR §§ 1250-1258
Transmission & Distribution	Routine	Every three years – all circuits	Ground Based (Detailed)	VM-02, VM-03, VM-05, VM-07	G.O. 95, Rule 35 (Case 13 and Case 14); PRC § 4293; PRC § 4295; CCR §§ 1250-1258
Transmission & Distribution	High-Risk, Off-Cycle, Post-Event	As needed	Ground Based (Patrol)	VM-02, VM-03, VM-05, VM-07	G.O. 95, Rule 35 (Case 13 and Case 14); PRC § 4293; PRC § 4295; CCR §§ 1250-1258
Transmission & Distribution	Pole Brushing	Annual – All Non-Exempt Poles; State ("SRA") and Federal ("FRA") Responsibility Areas Only	Ground Based Inspections	VM-02, VM-07	PRC § 4292; CCR §§ 1250-1258
Substation	Weed & Brush Control Inspections	Bi-annual – 12 Liberty substations	Ground Based Inspections	VM-02, VM-07	G.O. 174; PRC § 4292; PRC § 4293; CCR §§ 1250-1258
Transmission, Distribution, & Substation	QA/QC Inspections	See VM-04 for sampling methodology	Ground Based Inspections	VM02, VM-03, VM-04, VM-05, VM-07	G.O. 95, Rule 35 (Case 13 and Case 14); G.O. 174; PRC § 4293; PRC § 4295; CCR §§ 1250-1258
Transmission & Distribution	Routine	Annual – all circuits (performed by Electric Operations)	Ground Based Inspections, Aerial Inspections	VM-02, VM-03, VM-05, VM-07	G.O. 95, Rule 35 (Case 13 and Case 14); PRC § 4293; PRC § 4295; CCR §§ 1250-1258

Figure 1: Vegetation Inspection Process (T&D)

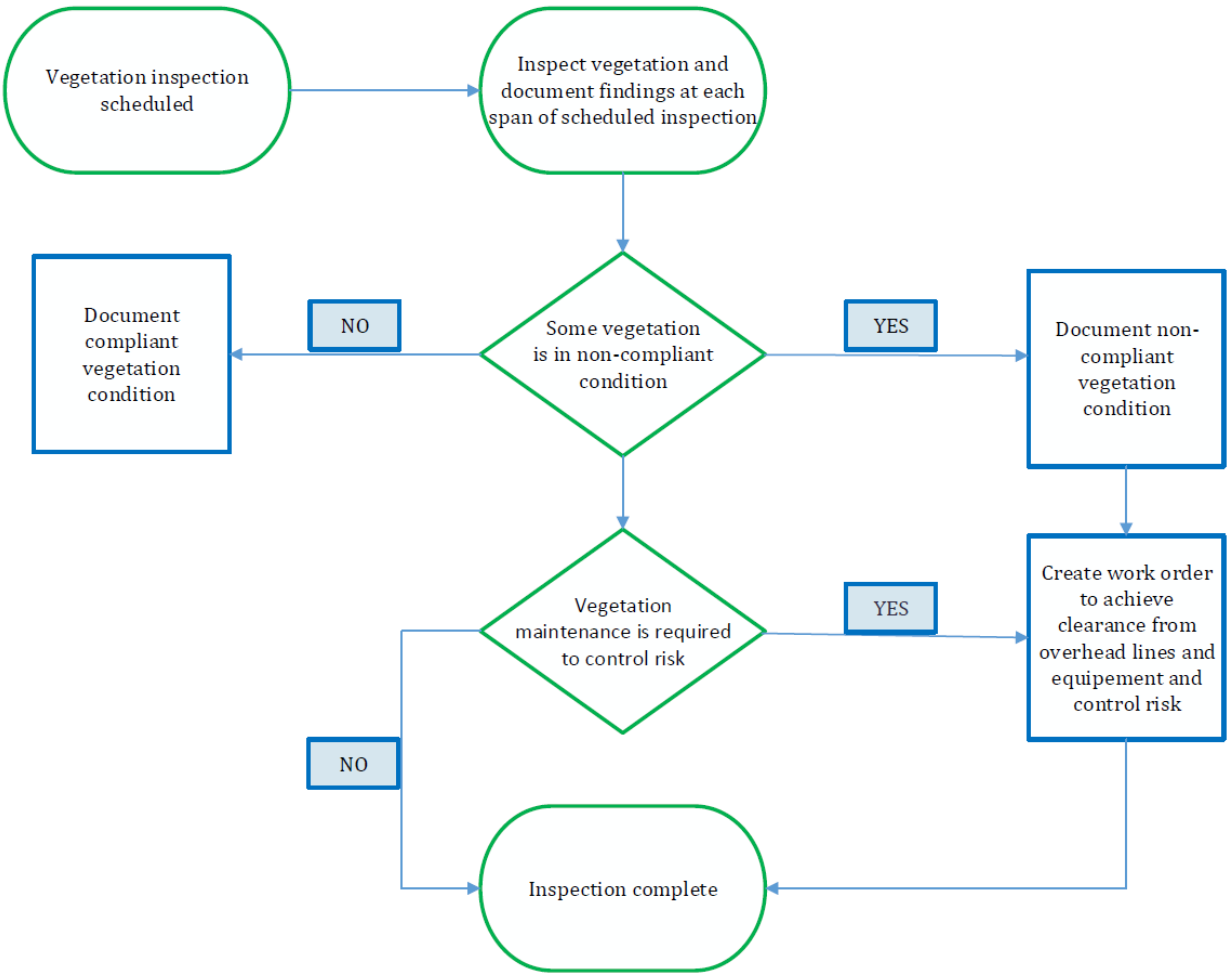
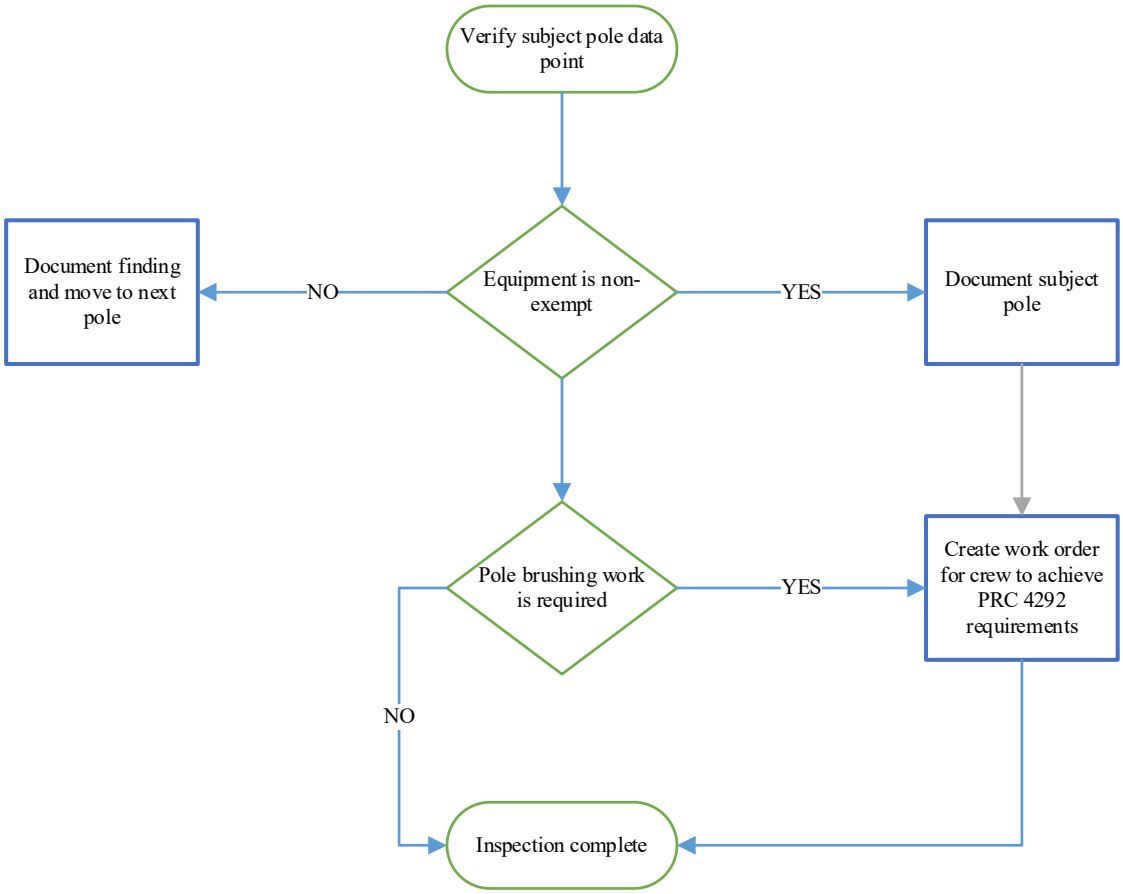


Figure 2: Pole Brushing Inspection Process



See Section 6.5 for Pole Brushing requirements

5.2 Notifications

See VM-06, Notification and Refusal Policy for detailed processes on VM notification protocols.

5.2.1 Pruning

In most cases permission to prune trees that are encroaching on electric facilities is not required should the pruning be justified for the utility to maintain compliance with State laws. Liberty or its contractors will make reasonable efforts to notify property owners of scheduled tree pruning.

Certain trees require more aggressive pruning to maintain safety and electric reliability. Should the pruning prescription require greater than 1/3 of the live crown of the tree to be removed or greater than 1/3 of the overall height of any tree to be removed, the property owner will be notified in writing prior to performing the necessary pruning.

5.2.2 Removals

Owners of trees that require removal for clearance or safety of the electrical facility will be notified by Liberty or authorized contractors in writing prior to removing the tree (see Attachment B - Tree work notification form). Should notification be unattainable, and no other reasonable options exist, all attempts made to contact the property owner shall be documented and photo of the tree condition shall be documented. Liberty will review this documentation prior to removing the tree (see Contact Attempt Tracking Form)

5.3 Emergency, Immediate, and Accelerated Work

5.3.1 Emergency Work

Emergency work is required to resolve a situation that has seriously compromised the electrical facilities, electric system reliability, and/or forest resources. These situations represent immediate threats to life, public safety, or property. Emergency situations generally result from high winds, storms, wildfires, other natural disasters, or other accidents that damage the electrical lines. Emergency repairs may include replacement of downed poles, re-conductoring segments of line, or pulling new line.

Emergency work will start immediately to correct unsafe conditions and return the electrical facilities to service. Examples of emergencies related to VM operations include but are not limited to:

- Vegetation in direct contact or that can make direct contact in wind or with snow/ice loading with electrical equipment or conductors resulting in electrical faults, arcing, or smoldering vegetation.
- Vegetation which has failed or is in the process of failure that will impact and come into direct contact with the electrical equipment.

- Broken or damaged structures and equipment from tree or limb failures that could result in an electrical outage, telecommunications failure, or hazardous material releases.

See additional information included in VM-05, Vegetation Threat Procedure

5.3.2 Immediate Work

Immediate work is required to resolve a situation that, if not corrected, could cause an outage or the threat to life and property at any time and needs to be immediately rectified.

See additional information included in VM-05, Vegetation Threat Procedure

5.3.3 Accelerated Work

Accelerated work requires the timely corrective action to mitigate an existing condition that at the time of identification represents a potential hazard to life, public safety, or property. Corrective action must be performed to avoid equipment damage or impending equipment failure, or to return equipment to normal operating function.

See additional information included in VM-05, Vegetation Threat Procedure

5.4 Quality Assurance/Quality Control (QA/QC) Process

Refer to Liberty's Post Work Verification Procedure (VM-04).

5.5 Complaints and Refusals

Refer to Liberty's Notification and Refusal Resolution Policy (VM-06).

5.6 Emergency/Storm Call-Out

During major events there are circumstances where additional contracted personnel are needed to assist with the increased workload. Responsibilities include but are not limited to field condition assessments, vegetation inspections, coordinating resources, emergency management, and post work verification. Since these events are unplanned and vary in significance, responsibilities can vary.

6 Standards

The following provides clearance requirements that are to be established and maintained for the various voltage classes at Liberty.

6.1 Clearances for Lines and Equipment Operating at 750 volts or less

Power lines or their supporting structures operating at 750 volts or less, do not have mandated vegetation to conductor clearance requirements. These types of lines include open-wire secondary and coated triplex or quadruplex aerial cable (including service drops), and guy wires. The following clearances at time of pruning shall apply:

- **Open Wire Secondary**: Four feet minimum from tree to open wire conductor at the time of pruning. Trees scheduled for pruning for open wire secondary will be inventoried based on tree growth characteristics to avoid tree line contact with conductors.
- **Coated Aerial Cable:** Prune for strain or abrasion only. Trees scheduled for pruning will be identified as showing evidence of strain or abrasion with wires. Trees will be allowed to contact coated aerial cable or service drops that show no sign of strain or abrasion.
- **Guy and Support Wires:** Prune for strain or abrasion; two feet minimum clearance from tree or portion of tree that is in contact with guy and support wire above the insulator (guy bob).

6.2 Clearances for Lines and Equipment Operating at 12kV to 25kV

The following clearances are to be achieved during VM work for this voltage class:

- Slow and medium growth potential – 12 feet
- Fast growth potential – 15 feet
- Removal of overhanging limbs which can come into contact with facilities due to structural characteristics or due to snow/ice loading conditions.

6.3 Clearances for Lines and Equipment Operating at 60kV or Greater

Liberty owns and operates numerous 60kV and 120kV power lines which assist in transmitting high-voltage electricity from substation to substation. Due to the importance of maintaining electric reliability on these lines, it is necessary that the standards for tree

pruning and removal be be greater than that of lower voltage distribution lines. In addition to the State mandated vegetation to conductor clearance, and to maintain system reliability, the following are to be addressed during VM work:

- Remove all branches which overhang the electrical conductors
- Remove all trees within the wire zone
- Remove all defected, dead, decayed or suppressed trees within the border zone

60kV Clearance Objectives

- Slow to medium growth potential – 12 feet
- Fast growth potential – 15 feet

120kV Clearance Objectives

- Slow to medium growth potential – 30 feet
- Fast growth potential – 35 feet

6.4 Clearance Tables

Table 2: Radial Clearance Requirements PRC 4293; GO 95, Rule 35, HFTD (Case 14)

Voltage	Regulation Clearance Distance **RCD**	Maintenance Action Threshold **MAT**	Maintenance Clearance Distance **MCD**	Overhang Clearance Distance **OCD**
12kV-25kV	4’	6’	12’-15’	15’-20’
60kV	4’	6’	12’-15’	Clear to Sky
120kV	10’	15’	30’-35’	Clear to Sky

RCD – Clearance distance between conductors and vegetation that is mandated by regulations.

MAT – Clearance distance that triggers the work scheduling process to prevent vegetation from encroaching into the RCD. The MAT is based on the regulation clearance with a safety margin multiplier of 1.5.

MCD – Clearance distance to be achieved at time of work. Minimum clearances based on Rule 35, Appendix ‘E’.

Table 3: Radial Clearance Requirements GO 95, Rule 35, Non-HFTD (Case 13)

Voltage	Regulation Clearance Distance **RCD**	Maintenance Action Threshold **MAT**	Maintenance Clearance Distance **MCD**	Overhang Clearance Distance **OCD**
12kV-25kV[2]	1.5’	6’	12’-15’	15’-20’
60kV	1.5’	6’	12’-15’	Clear to Sky
120kV	1.7’	15’	30’-35’	Clear to Sky

Note: **MAT** and **MCD** for Non-HFTD will be the same as those in the HFTD

In addition to the above clearances, Liberty shall mitigate vegetation encroachments on circuits or portions of circuits energized at voltages less than the minimum voltages specified in the above tables when the equipment shows evidence of strain or abrasion from vegetation contact. The strain or abrasion shall be corrected by any of the following methods:

- Reducing conductor tension
- Rearranging or replacing the conductor
- Pruning or removing vegetation
- Placing mechanical protection on the conductor

6.5 Pole Brushing

1. **Minimum Clearance Provisions - PRC 4292**: Flammable vegetation and materials located wholly or partially within the cylindrical[3] space (see Figure 1), or firebreak area, surrounding poles that support non-exempt equipment shall be treated as follows:

(a) At ground line, a minimum of a 10-foot radius area (see Figure 2), measured horizontally from the outer circumference of the pole, shall be consistent with a firebreak and be cleared by removing all flammable materials, including but not limited to, ground litter and debris, duff, and dead or desiccated vegetation that could propagate fire

[2] See General Order 95, Table 1, Reference (ccc)

[3] A cylinder that extends from the ground line to the highest point of conductor attachment

(b) From the ground line to 8 feet above the ground line, a minimum of a 10-foot radius area, measured horizontally from the outer circumference of the pole, shall be cleared by removing flammable materials including trees, herbaceous and brush vegetation, grass, trash, debris or other materials.

(c) All limbs and foliage of living or dead trees that are smaller than 4-inches in diameter shall be removed up to a height of 8 feet. Limbs and foliage that are 4-inches in diameter or greater must be reported to the Liberty Project Manager. The report shall include the pole location and pole identification number.

(d) From 8 feet to the horizontal plane of highest point of conductor attachment, document and report dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety.

Figure 3: Fire Break Clearance Requirements Around Poles

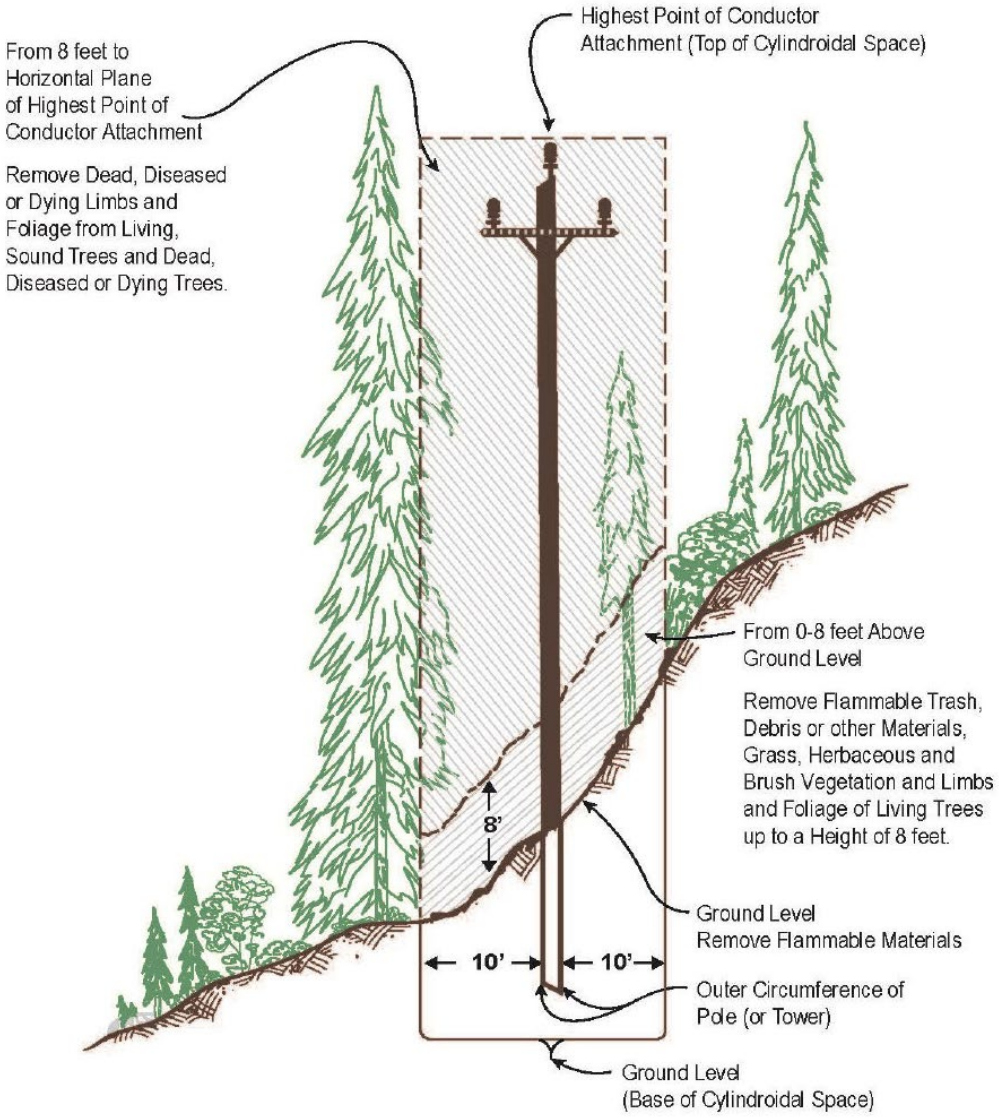
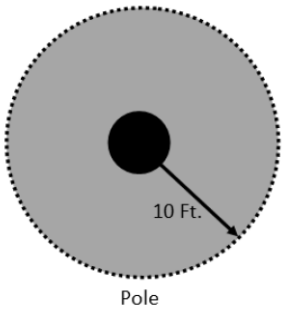


Figure 4: Outer Circumference Example (Plan View at Ground Level)



7 Mapping/Database Management

Liberty utilizes third-party data collection and work management software for routine vegetation inspections and maintenance. Liberty integrates inspection and maintenance activities documented on the work management system with other program management processes and tools. Liberty integrates tree inventories and asset information derived from LiDAR inspections and enterprise GIS data into the software to inform vegetation inspections and maintenance activities.

The main function of the data collection and work management software is to document tree work inventories, notifications, assign work orders to vegetation management crews, and document completion of the work. Liberty relies on geospatial data to integrate vegetation management data into other software and utilizes map-based work management programs.

Liberty integrates tree and work order inventory data with a program management tracking system to oversee schedules, project status, workloads, identify project owners, and overall vegetation management annual workplan implementation and completion.

Liberty also utilizes supplemental third-party inventory management software to analyze and review LiDAR acquisition data, inventory clearance-exempt trees, emergency response, and vegetation caused outage investigations.

7.1 Responsibilities

Liberty monitors the annual workplan to track routine inspection and maintenance on progress to meet program targets. Line miles inspected, unit counts, and work order inventories per circuit shall be updated weekly into the program tracking system. Reporting responsibilities of inspection contractors shall follow specifications of the scopes of work.

8 Data Entry

Data of tree characteristics, conditions, photos, location information, and risk control measures shall be documented by VM inspectors using approved data collection software for routine inspections. Work order prescriptions should be made based on the vegetation conditions at time of inspection with consideration for controlling the risk prior to encroachment of the RCD or expected tree failure (see VM-05, Vegetation Threats Procedure).

Data entry and documentation responsibilities of the inspection contractors shall follow specifications of the scopes of work.

Table 4: T&D VM Inspections Location Attributes

Attributes Used	Selection List	Status	
Physical Address	N/A		On (Required)
Physical City	N/A		On (Required)
Physical State	N/A		On (Required)
Ownership Type	Ownership Type		On (Required)
APN	N/A		On (Required)
HFTD	High Fire Threat District		On (Required)
Customer Name	N/A		On
Phone Number	N/A		On
Email Address	N/A		On
Mailing Address	N/A		On
Mailing City	N/A		On
Mailing State	Mailing State		On
Mailing Zip Code	N/A		On
Refusal	Refusal		On (Toggle, Determines Color)

Location Comments	N/A		On
Latitude	N/A		On
Longitude	N/A		On
ID	N/A		On (Cannot Remove)
Created By	N/A		On (Cannot Remove)
Date Created	N/A		On (Cannot Remove)
WorkGroup	N/A		On (Cannot Remove)
Year	N/A		On (Required, Cannot Remove)

Table 5: T&D VM Inspections Span Attributes

Span Inspection Form			
Attributes Used	**Selection List**	**Status**	
Inspection Date	N/A		On (Required)
Inspection Type	Inspection Type		On (Required)
Span Compliant	Span Compliant		On (Required)
HFTD	High Fire Threat District		On (Required)
Circuit	Circuit		On (Required)
Section	Section		On (Required)
Span ID	N/A		On (Required)
Span Length (Miles)	N/A		On (Required)
Covered Conductor?	N/A		On (Toggle)
Federal Owner?	N/A		On (Toggle)
National Forest Name	N/A		On
ID	N/A		On (Cannot Remove)
WorkGroup	N/A		On (Cannot Remove)
Created By	N/A		On (Cannot Remove)
Date Created	N/A		On (Cannot Remove)
Year	N/A		On (Required, Cannot Remove)

Table 6: T&D VM Inspection Vegetation Attributes

Tree Form			
Attributes Used	**Selection List**	**Status**	
Locations	N/A		On (Association Linked, Required)
Tree ID	N/A		On
Species	Species		On
Quantity	N/A		On (Required)
DBH	N/A		On
Height	N/A		On
Tree Health	Tree Health		On
Defect Type	Tree Defect		On
ROW Position	ROW Position		On
MWS	N/A		On (Toggle)
SEZ	N/A		On (Toggle)
Latitude	N/A		On
Longitude	N/A		On
Photos	N/A		On
ID	N/A		On (Cannot Remove)
Created By	N/A		On (Cannot Remove)
Date Created	N/A		On (Cannot Remove)
WorkGroup	N/A		On (Cannot Remove)
Year	N/A		On (Required, Cannot Remove)

Table 7: T&D VM Inspection Work Order Attributes

Work Order Form			
Attributes Used	**Selection List**	**Status**	
Tree	N/A		On (Association Linked, Required)
Work Status	Status		On (Required, Determines Color)
Inspection Type	Inspection Type		On (Required)

Project Type	Project Type		On (Required)
District	District		On (Required)
Line Type	Line Type		On (Required)
Circuit	Circuit		On (Required)
Section	Section		On (Required)
Span ID	N/A		On (Required)
Pole Number	N/A		On (Required)
Priority Level	Priority Level		On (Required)
Vegetation Threat	Vegetation Threat		On (Required)
Work Type	Work Type		On (Required)
Cleanup Method	Cleanup Method		On (Required)
1st. Contact Attempt	Contact Attempt		On (Required)
1st. Contact Attempt Date	N/A		On (Required)
2nd. Contact Attempt	Contact Attempt		On
2nd. Contact Attempt Date	N/A		On
Contact Attempt Comments	N/A		On
Special Considerations	N/A		On (Toggle)
24 Hours' Notice Requested	N/A		On (Toggle)
Roadside	N/A		On (Toggle)
TRPA Tree	N/A		On (Toggle)
TRPA Authorized	N/A		On
TWNF Received	N/A		On
Work Order Comments	N/A		On
Assigned WorkGroup	N/A		On
Assigned Crew	N/A		On
Photos	N/A		On
ID	N/A		On (Cannot Remove)
Created By	N/A		On (Cannot Remove)
Date Created	N/A		On (Cannot Remove)
WorkGroup	N/A		On (Cannot Remove)
Year	N/A		On (Required, Cannot Remove)

9 Approvals

Program Manager	Signature	Date
Eric Oiler	Eric F. Oiler	8/25/2023

10 Revision History

Version No.	Revision Date	Revised By	Description of Revisions
1	08/25/2023	Eric Oiler	Initial release

11 Distribution and Data Retention

The official version of the document shall be stored in the Vegetation Management Program Document Library in the West General (X:) Vegetation Management Folder while in effect and retained for at least seven (7) years thereafter.

Distribution:

- Wildfire Prevention Sr. Manager
- VM Manager
- VM Supervisor
- VM Coordinator
- System Arborist