



# Quality Control Vegetation Management for Routine Electric Distribution



## Summary

Describes the QC Vegetation Management (QCVM) assessment criteria for overhead electric distribution facilities as directed in the Vegetation Management (VM) Distribution Inspection Procedure (DIP), TD-7102P-01.

## Stakeholders

All Quality Control (QC) Specialist personnel of the Quality Management teams.

## Scope

Distribution Routine VM locations in High Fire Threat District (HFTD) that have been completed by the VM Inspector (VMI), and tree crews (TC) as documented in the system of record.

## Associated Tools

- Field Maps
- Survey123 application
- Measuring Tools

## Safety

Acknowledge you have performed a job safety analysis at location and have confirmed all necessary controls are in place.

**Reference:** Utility Standard: SAFE-1039S Lone Workers

### **ALERT:**

All QCVM personnel must notify the property contact/owner in advance of entering any location/property, when any of the following VM Alerts are observed in the System of Record, Bad Dog, Concerned Customer, Dog, Locked Gate, Notify 1st, PI Notify 1st, Past Refusal, and/or Past Civil Standby.

Only access properties when it is safe to do so when it is safe to do so. The Specialist should follow all safety alerts from all available sources to ensure everyone and everything is always safe.

## Process

### 1. Access Constraint

QC Specialist will determine if location can be reviewed. If unable to review location, the choices below are available to describe the reason for not reviewing the location. QC Specialist must select one option and include comments to describe the situation.

It is expected that the QC specialist reviews all safety alerts and makes one contact attempt to obtain access to the property. If no response or the customer refuses access, then the QC Specialist documents accordingly in the survey. Once the survey is closed as unable to access, it will be documented as a constraint. Do not make a second attempt to submit a survey if access is obtained later.



For other non-customer-related access restrictions, considered temporary, such as weather or unsafe road conditions. Determine a reasonable timeframe to attempt a second approach to access the property before closing survey and skipping the review. Discuss with QC Supervisor or Manager if further guidance is needed. Provide comments to explain the situation when the decision is not to review the location.

If QC determines that the survey location assigned is in a Non-HFTD area and no portion of the Distribution facilities reside in HFTD, then skip review by constraining the location by selecting other and enter reason in comments section.

Reasons for Skipped Review:

- Safety Concern
- Accessibility issues
- All vegetation work at location not complete
- Customer concerns or refusal
- 2<sup>nd</sup> patrol inspection occurring
- Other

## 2. QC Time Frame of Distribution Location Assessment

When the QC Specialist arrives at the survey location an assessment must occur to determine if recent tree work has occurred on the trees prescribed for work that can impact the distribution facilities within the span, THEN, Indicate the QC timeframe of the Distribution location review.

- Select Post VMI when the Distribution location has NONE OR ANY prescription trees PENDING completion by the tree crews.
- Select Post Tree Crew (TC) when the Distribution location has ALL prescription trees worked by the tree crews.

The timeframe selected designates whether the QC Specialist will evaluate the surrounding vegetation to be identified AND recorded on the QC Map (Post VMI) OR mitigated (Post TC) when measuring vegetation encroachment and fall-in conformance.

During Post VMI, deficiency findings are reported by QC when vegetation is identified that does NOT meet scope requirements AND is NOT recorded by the VMI as a pending work prescription in our QC Map.

During Post TC, deficiency findings are reported by QC when vegetation is identified that does NOT meet scope requirements and is NOT mitigated.

## 3. Survey Criteria

### 3.1. Vegetation Encroachment Primary-Minimum Distance Requirement (MDR):

Verify all trees at location will maintain MDR until next routine cycle (13 months from VMI date)

**Reference:** TD-7102P-01 - Appendix A: Minimum Distance Requirements (MDR)

**Note:** Depending on span length, facility construction and conductor material, potential sag and sway can range from 1' at quarter-span to 4' at mid-span.

QC Specialist should consider the following when evaluating compliance for MDR within the applicable cycle timeframe dependent on last VMI date and VM program.



Vegetation growth, tree canopy shift/sway, line loading, line sag, line blow-out, and foreseeable environmental factors under normal weather conditions such as wind and snow load for the location.

### ALERT:

QC must follow Priority Tag Procedure (TD-7102P-17) when priority trees are observed on distribution voltage lines and the Hazard Notification (TD-7103P-09) and Imminent Threat Procedures (TD-7103P-05) when vegetation hazard conditions are observed that can impact transmission voltage lines.

If QC specialist identifies a tree that meets the criteria of a Major Woody Stem (MWS) at the survey location, then verify the following.

- Wood is more than 6 inches from high voltage conductor.
- There is no evidence of prior contact between any portion of the tree branches or trunk and the conductor, including abrasion and/or incidental contact. (This does not apply to burn marks due to previous contact that has been mitigated.)
- The tree has been established in its current location for at least 10 years.
- The tree is at least 10 in. in diameter at breast height (DBH)
- The tree or limb at the conductor level is at least 6 in. in diameter.
- The tree is not resprouting at the conductor level at the time of inspection.
- The tree is not easily climbable, with scaffold branches present below 8.5 ft. from the ground.

The tree is not hazardous per TD-7102P-17, "Vegetation Management Priority Tag Procedure."

If the QC specialist identifies that any of the above conditions have not been met, then initiate a PTT record and create a Veg survey for the priority tree deficiency finding in the QC Map.

### NOTE:

QC specialists are not expected to determine if the MWS exemption is recorded in the VM System of Record.

### 3.2. Overhang – Enhanced Vegetation Management (EVM):

If location (or portion of) is a prior claimed EVM segment, then verify all trees at location (or portion of) will maintain EVM overhang clearance cycle (13 months from VMI inspection date).

QC Specialist must select the EVM Conductor Layers to identify prior claimed EVM segment areas.

**Reference:** TD-7102P-01 – ATT02: All electric distribution circuits where EVM miles have been claimed, all overhanging vegetation that will encroach the 4-ft overhang plane before the next annual inspection cycle must be prescribed to remove all overhangs, per Utility Procedure TD-7106P-01, "Enhanced Vegetation Management Wildfire Mitigation Plan (WMP) Commitments."



## Quality Control Vegetation Management for Routine Electric Distribution



### 3.3. Vegetation Fall-in Findings

Verify all live trees and brush (either a whole tree or portion of tree) at location that are capable of impacting PG&E electric facilities (excluding service drops) and probable to fail prior to next routine patrol cycle (13 months from VMI date) are mitigated.

Verify that all dead trees and brush (either a whole or portion of tree) at location, which are capable of impacting PG&E electric facilities (excluding service drops) are mitigated.

**NOTE:**

Perform a Limited Visual Assessment (either a whole tree or portion of tree) to evaluate surrounding fall-in vegetation for defects and site conditions. Perform a Level 2 assessment if necessary. Consider the impact to facilities when the fall-in vegetation can cause a consequence by making contact (i.e., damage, outage and/or ignition).

**Reference:** TD-7102P01: Appendix B – Overview of Tree Defects and Site Conditions. The hazard Trees/Vegetation Clearance section of the “California Power Line Fire Prevention Field Guide” provides information on tree defects and site conditions that increase the likelihood of tree failure.

QC Specialist will follow the QCVM Tree Risk Assessment Guidance when evaluating Fall-in Vegetation.

### 3.4. Vegetation Encroachment Secondary:

Verify the secondary conductor(s) (excluding service drop) are free of significant strain and/or abrasion.

**Reference:** TD-7120P-01: Vegetation Management Distribution Inspection Procedure.

**Abrasion** is defined as damage to insulation resulting from friction between vegetation and conductors. Scuffing or polishing of the insulation or covering is not considered abrasion.

**Strain** is present when vegetation contact significantly compromises the structural integrity of supply. Contact between vegetation and conductors is not considered strain.

## 4. QC Tree Marking, Quantity and Finding Type

- QC Specialist will use pink/black pattern flagging to indicate each QC vegetation finding. QC Specialist will ensure all vegetation deficiencies at the survey location are recorded in the QC Field Map application and the applicable missed and/or vegetation survey.
- Quality Solutions will collect the vegetation deficiency findings recorded by the specialist in our QC System of Record for each survey location to determine the QC Pass Rate. Quality Solutions is responsible for calculating trees inspected from the VM System of Record

### 4.1. Finding responsibility:

Which VM work group is likely responsible for the QC vegetation finding? Options:

- VMI
- Tree Crew
- Inconclusive

This initial assessment will aid VM execution with their root cause analysis.

QC specialist will identify total trees marked by execution for other VM programs, in current year, that was identified as a QC finding.



## Quality Control Vegetation Management for Routine Electric Distribution



### 4.2. Finding Type:

#### **MDR Vegetation Conformance Deficiency**

*Work Priority of vegetation P1, P2, Routine*

*Tag Type: Non-Compliant (within MDR) & Potential Grow-in (At or approaching MDR)*

#### **Secondary Strain and Abrasion Deficiency**

*Tag Type: Secondary strain & abrasion*

#### **EVM Overhang Clearance Deficiency**

*Tag type: EVM OV*

#### **Fall in Vegetation Deficiency**

*Work Priority of vegetation: P1, P2, Routine*

*Tag type options: Non-Compliant, Dead, root instability, cavity/decay, diseased, defective, and site disturbance*

**Priority 1 or 2** Follow the applicable Priority Tag Procedure

#### **QC Tag Type Descriptions:**

##### **Dead**

- The crown ratio of entire tree canopy is predominantly dead and/or has dead portions capable of impacting PG&E electrical facilities.

##### **Potential Grow-in (PGI)**

- Vegetation is currently compliant with PG&E's Minimum Distance Requirements (Distribution voltage) but won't hold 13 months from the VMI inspection date.

##### **Non-compliant**

- Vegetation is currently compliant with PG&E's Minimum Distance Requirements (Distribution voltage) but won't hold 13 months from the VMI inspection date.

##### **Secondary Strain**

- Vegetation is causing significant strain and abrasion on secondary lines (excluding service drops).

##### **EVM OV**

- On prior EVM passed segments, tree is within or approaching the 4 ft. extended overhang distance from the primary lines.

##### **Root Instability**

- Signs of uprooting, shallow roots, and exposed roots due to erosion, excavation, or fire damage.

##### **Cavity/Decay**

- An open wound or cavity and/or decay exposing the trunk or branch within striking distance. Identify softened, rotten and fire damaged wood that compromise structural integrity.

##### **Diseased**

- Evidence of fungal fruiting body(ies) of known decay causing fungi (if unknown assume decay causing).
- Signs of distress from disease and/or insects that result in a tree with dead branches, thinning/reduction, or chlorosis(yellowing) in tree canopy not associated with annual dormancy in deciduous trees.



## Quality Control Vegetation Management for Routine Electric Distribution



- Bleeding or seeping cankers evident in multiple locations of the tree trunk.

### Defective

- Severe, uncorrected lean towards facilities within strike zone.
- Cracks, seams, or splits of the diameter of the trunk or stem that extend internally.
- Codominant trees with V-shaped trunk unions and included bark. Deformity and/or bad crotch attachments increase the likelihood of failure.
- Mechanical damage compromising structural integrity.

### Site Disturbance

- Locations where disturbance has occurred since the previous annual patrol cycle, which impacts a tree or tree stand and may expose remaining tree(s) to new risk (e.g., logging operations resulting in new edge trees, construction development that compromises root stability, fire damage, soil failure around root base).
- Consider significant root loss or when a tree has poor height-to-diameter ratio with most of the surrounding tree protection removed or planned for removal.

Minimum Distance Requirements				
Jurisdiction	LRA (non-HFTD) Applicable year-round	HFTD  Applicable year-round	SRA Applicable during fire season	FRA (When on USFS property) Applicable during fire season
Regulation	G.O. 95, Rule 35	G.O. 95, Rule 35	PRC 4293	PRC 4293
Minimum Distance Requirement for Primary Conductors greater than 750 volts	18-inches	4-feet	4-feet	4-feet
Requirement for Conductors less than 750 volts	Prune if strain or abrasion to the conductor is observed.			

- If LRA overlaps with HFRA PG&E MDR guidance is consistent with HFTD requirements, unless otherwise constrained.
- If FRA is not on USFS Property, PG&E MDR guidance is consistent with HFTD requirements, unless otherwise constrained.
- Vegetation must not encroach within the minimum distance at any time between inspection and one year or next scheduled Inspection Cycle.
- Depending on span length, facility construction and conductor material, potential sag and sway can range from 1-foot at quarter-span to 4-feet at mid-span.



## Quality Control Vegetation Management for Routine Electric Distribution



**Facilities (Distribution):** The components of the electric distribution overhead system, including pole/support structure, primary conductors [4 kilovolts (kV) and less than 60 kV—with the majority being between 4 kV to 21 kV], voltage regulating equipment, switching equipment, transformers, and secondary conductors (operates under 750 V and supply ranging from 120 V to 480 V). Refer to TD-8105, "Distribution Line Overhead Asset Management Plan" for additional details.

**Service Drop:** Service Drop means that portion of a circuit located between a pole line and a building, a structure, or a service and meter pole (Section 23.4 of GO 95)

### Approval Requirements

Approval from QC leadership is required.

### Revision Requirements

Editorial changes – any update that does not change requirements in a document *does not* require reapproval.

Requirement changes – any update that changes requirements in a document *requires* the document to be reapproved.

### Revision Notes

Rev #	Date	Description
0	MM/DD/YYYY	Original Publication
01	02/26/2024	Formatting updated, new criteria for 2024 added.
02	05/10/2024	Added guidance to verify the PG&E facilities at the location reside in HFTD otherwise constrain. Added QC Timeframe of Assessment to select Post VMI or Post TC. Updated to clarify differences in reporting veg deficiency findings depending on Post VMI or Post TC.
03	05/31/2024	Minor clarifications in Section 4.2.

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