QCVM for Routine Electric Transmission

SUMMARY

This Standard Work document describes the Quality Control (QC) processes for routine Vegetation Management (VM) electric transmission.

STAKEHOLDERS

All Quality Control Specialist personnel of the Quality Management teams.

PREREQUISITES

Active AWRR ID and LAN ID.

Access to the QC Map and QVVM Transmission LiDAR Map.

SCOPE

QC assessment criteria for overhead electric transmission facilities as directed in the VM Transmission Inspection Procedure (TIP), TD-7103P-01.

Transmission 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 Vegetation Management system of record.

ASSOCIATED TOOLS

QC and 2024 QVVM LiDAR Field Map Applications

Measuring Tools

Survey123 application

SAFETY

QC Specialist will acknowledge a job site safety analysis has occurred at each survey location to confirm all necessary controls are in place.

Reference: Utility Standard: SAFE-1039S Lone Workers

ALERT:

All QC 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.

The expectation is to only access properties 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 by answering Yes or No.

If the answer is Yes, the survey continues as described in section 3 – QC Assessment Area.

If the answer is No, the choices below become available to describe the reason for not reviewing the survey location. QC Specialist must select one option and include comments to describe the situation.

QC Specialist is only required to make one contact attempt to access the property. If no response or the customer refuses access, then document accordingly in the survey to close. Once the survey is recorded

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 at a later.

For 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 skip 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.

1.1. Location Survey Criteria

Reasons for skipped review.

- Safety concern
- Accessibility issues
- All vegetation work at location not complete
- Customer concerns or refusal
- Other

2. Assessment Area – Establish Location Boundary

In the field, the QC Specialist will identify survey location area based on a span between transmission structures and/or parcel boundaries and/or other distinguishing features that delineate a start and stop.

2.1. Location Survey Criteria

Select the location boundary applied by the QC Specialist .

- Span from PG&E pole or structure to PG&E pole or structure
- PG&E pole or structure to parcel boundary (partial span)
- PG&E pole or structure to physical barrier (waterway, canyon, fence, or road)
- Parcel boundary to parcel boundary (mid-span)
- Other

The QC Specialist determines and defines the location boundary for the QC survey by reading the data fields entered by the VMI in the locations assigned from the VM Execution System of Record.

The QC Specialist must enter comments to describe exactly what work area is considered the area to assess the surrounding vegetation.

If the VMI comments from the VM Execution System of Record are inconclusive, and don’t clearly describe the survey location, the QC specialist can either establish the boundary they believe fits the situation or skip the review until further information can be obtained.

3. Vegetation Encroachment Transmission Conductor – Minimum Clearance Distance

3.1. Vegetation Survey Criteria

Verify all vegetation at location will maintain PG&E's Transmission voltage Minimum Clearance Distance until next routine cycle (13 months from VMI date).

Reference: TD-7103P-01 – VM Transmission Inspection Procedure, Appendix E, Table 3: PG&E Minimum Clearance Distance (MCD) Requirements.

a. QC specialist should consider the following when evaluating conformance for the transmission voltage conductor and the surrounding vegetation minimum clearance distance requirements for a 13-month timeframe from the VMI inspection date at the survey location.

- Vegetation growth
- Tree canopy shift/sway
- Line loading
- Line sag
- Line blow-out
- Foreseeable environmental factors under normal weather conditions
- Wind and snow load for the location
- Be aware that century plants can produce a flower stem that may encroach MCD.

b. QC will reference the QVVM 2024 LiDAR application to identify the LiDAR detections in the transmission survey location to assist with determining MCD conformance. For specific LiDAR detection specifications and priority ranking, refer to the Transmission Inspection Procedure, TD-7103P-01 Appendix A, LiDAR Clearance Parameters, Table 1 and 2. These two tables are also included at the end of this document. Refer to the *QC Routine Transmission LiDAR User Guide* for more details.

c. If the assigned QC survey location doesn't have current vegetation LiDAR data for the transmission line and vegetation is nearby, then constrain the survey noting insufficient information: 2024 LiDAR DATA NOT AVAILABLE.

NOTE

Transmission VMI's promptly review Urgent LiDAR detections (VC1U_AF and VC1U_MO) when received from the LiDAR vendor. It's likely that necessary off-cycle tree work may have already occurred prior to the routine transmission patrol.

d. When vegetation is located within the transmission wire zone, the Minimum Ground to Conductor Clearance (MGCC) should be evaluated by the QC specialist to determine MCD conformance. Use the MGCC plus the MCD for the applicable voltage and anticipated vegetation growth, to identify if the vegetation could encroach prior to 13-months from the VMI inspection date.

- If the MGCC appears inaccurate based on conditions observed in the field, such as canyon crossing, uneven ground and/or the conductor is measured lower than the MGCC height, then discuss with supervisor prior to submitting survey.

e. When the specialist applies anticipated vertical line movement such as sag for MGCC, only vegetation that could encroach within the MCD should be considered a grow-in finding. Do not create MCD findings for vegetation that is anticipated to be at or approaching the MCD due to estimated line movement.

- Transmission LiDAR detections, Max-Op Grow-In (VC1c_MO and VC1p_MO) have the line load and sag conditions pre-determined in the calculations for the location of the vegetation detection. Do not add additional buffers for load and sag with Max-Op vegetation detections.

f. Conductor blowout is ONLY evaluated for transmission lines that are regulated by the North American Electric Reliability Corporation (NERC). These consist of all 230kv and 500kv transmission lines. In addition, three lower voltage transmission lines in Sierra Division, Drum Summit #1 and #2 - 115kv lines and the Spaulding Summit 60kv line and are patrolled within the CR Drum Summit corridor.

- QC will assess blowout on NERC lines by referring to the 2024 QVVM LiDAR application for the transmission location and determine if any vegetation was identified by LiDAR to have the VC1C_BO detection code.

  Verify all VC1C_BO detections are mitigated adjacent to the NERC critical transmission line. If no tree work is evident and the VMI didn't create an inspection record that explains why no work was needed, the QC specialist must create a veg deficiency for MCD.

- Include the LiDAR detection code (example VC1c_AF) and the TreeID (example W121047145N38977606) from the 2024 QVVM LiDAR application in the comments field for each QC Vegetation finding to assist VM Execution with locating the finding.

ALERT:

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

4. Vegetation Overhang – Transmission Clearance Requirements

4.1. Vegetation Survey Criteria

a. Verify all vegetation at location will maintain the transmission overhang clearance requirement for 13 months from the VMI inspection date. Reference: TD-7103P-01 - Transmission Inspection Procedure - Section 5.2.4a – Inspect and Prescribe work to Prevent overhanging limbs.

b. QC should consider the following when evaluating transmission overhang clearance conformance for the 13-month timeframe from the VMI inspection date at the location.

- Vegetation growth
- tree canopy shift/sway
- foreseeable environmental factors under normal weather conditions
- wind and snow load for the location.

c. Include the LiDAR detection code (example VC1c_AF) and the TreeID (example W121047145N38977606) from the 2024 QVVM LiDAR application in the comments field for each QC Vegetation finding to assist VM Execution with locating the finding.

5. Fall-in Vegetation Findings

5.1. Vegetation Survey Criteria

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

- Perform a Limited Visual Assessment to identify surrounding dead fall-in vegetation. Perform a Level 2 assessment if necessary.

  Reference: TD-7103P-01 – Transmission Inspection Procedure, Section 9.1.2: For danger trees located on or adjacent to a utility right-of-way or facility that could impact utility facilities should it fall where (1) the tree leans toward the right-of-way, or (2) the tree is defective because of any cause, such as heart or root rot, shallow roots, excavation, bad crotch, dead or with dead top, deformity, cracks or splits, or any other reason that could result in the tree or a main lateral of the tree falling, ASSIGN an appropriate unified work code.

b. 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.

- Perform a Limited Visual Assessment to evaluate surrounding fall-in vegetation for defects and site conditions. Perform a Level 2 assessment if necessary.
- Specialist will follow the QM VM Tree Risk Assessment Guidance when evaluating Fall-in vegetation.
- Dead vegetation is NOT dependent on likelihood of failure within 13-month period from VMI inspection date.
- Consider the impact to facilities when the fall-in vegetation can cause a consequence by making contact (i.e., damage, outage and/or ignition). Electric distribution underbuilt facilities MUST also be considered if they exist at the QC survey location.
- Include the LiDAR detection code (example VC1c_AF) and the TreeID (example W121047145N38977606) from the 2024 QVVM LiDAR application in the comments field for each QC Vegetation finding to assist VM Execution with locating the finding.

6. QC Recording of Transmission Vegetation Deficiency Findings

6.1. For each transmission vegetation deficiency finding, the Specialist will need to plot the corresponding Vegetation point in QC Field Maps AND create a VM QC Vegetation Survey.

a. If an existing Veg Point exists on the QC Map, then the Specialist completes a Veg Point survey for each vegetation deficiency finding by using the pre-existing veg point.

b. If the Veg Point does NOT exist on the QC Map, then the Specialist creates a veg point and completes a Missed Veg Point survey for each vegetation deficiency finding.

An example of the three transmission vegetation deficiency types, work priorities and QC Tag types are listed below.

6.2. Vegetation Survey Criteria

Trans MCD Vegetation Conformance Deficiency

What priority is the vegetation condition?

- Hazard Notification Immediate (transmission only)
- Hazard Notification Urgent (transmission only)
- Routine

What is the applicable QC Tag Type?

- Trans Non-Compliant (Within MCD)
- Trans Potential Grow-In (At or Approaching MCD)

Trans Vegetation Overhang Clearance Deficiency

What priority is the vegetation condition?

- Routine

What is the applicable QC Tag Type?

- Trans OV

Trans Vegetation Fall-In Deficiency

What priority is the vegetation condition?

- Hazard Notification Immediate (transmission only)
- Hazard Notification Urgent (transmission only)
- Routine

What is the applicable QC Tag Type?

- Trans Dead
- Trans Cavity/Decay
- Trans Diseased
- Trans Defective
- Trans Root Instability
- Trans Site Disturbance

a. Identify when the QC vegetation deficiency finding is marked with VM paint and/or flagging. Then answer the following question for each vegetation survey finding.

   Is this tree marked by another VM Program or during routine maintenance patrol from prior year?

   Yes/No

   When the answer is Yes, Quality Solutions will exclude from the failed vegetation count.

b. For each QC Veg Finding, include the LiDAR detection code (example VC1c_AF) and the TreeID (example: W121047145N38977606) from the 2024 QVVM LiDAR application in the comments field if applicable. This will assist VM Execution with locating the finding.

7. Apparent Causal Evaluation

When QC identifies a vegetation deficiency finding, determine the most likely responsible VM work group by answering the question below. This will provide execution with preliminary information to begin their root cause analysis.

7.1. Vegetation Survey Criteria

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

- VMI
- Tree Crew
- Inconclusive

8. Tree Marking and Quantity

- Specialist will use pink with black pattern flagging to indicate each QC vegetation finding.
- Quality Solutions is responsible for calculating trees inspected from the VM System of Record.
- 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.

9. Transmission QC Tag Type Descriptions

QC Trans Non-Compliant - Vegetation observed within PG&E's Minimum Clearance Distance (MCD) requirements for the Transmission voltage conductor.

NOTE:

Follow the applicable Priority Tag Procedure or Hazard Notification Procedure depending on the voltage of line.

QC Transmission Potential Grow-in (PGI) - Vegetation is currently compliant with PG&E's Minimum Clearance Distance (MCD) requirements for the transmission voltage but will not hold 13 months from the VMI inspection date.

NOTE:

When estimating potential line movement (MGCC and Blow-out), only report PGI's when the vegetation will be less than the MCD distance NOT when determined to be outside MCD.

QC Transmission OV

Tree is currently overhanging the transmission conductor or will encroach above the transmission conductors within 13 months from the VMI inspection date.

QC Dead

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

NOTE:

For Live Fall-In Vegetation, report findings that are probable to impact PG&E facilities within 13 months from the VMI inspection date at the QC survey location.

QC Root Instability

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

QC Cavity/Decay

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.

QC Diseased

- Evidence of fungal fruiting bodies of known decay causing fungi (if unknown assume decay-causing).
- Signs of distress from disease and or insect that result in a tree with dead branches, thinning or reduction, chlorosis (yellowing) in tree canopy not associated with annual dormancy in deciduous trees.
- Bleeding or seeping cankers evident in multiple locations of the tree trunk.

QC Defective

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

QC 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 such as wind throw (i.e., 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 to be removed.

TRANSMISSION MINIMUM CLEARANCE DISTANCE (MCD) REQUIREMENTS

Table 3. PG&E Minimum Clearance Distance

	60/70 kV	115 kV	230 kV	500 kV
PG&E Minimum Clearance Distance	4 ft.	10 ft.	10 ft.	15 ft.

Note: The PG&E-defined minimum clearance distances (Table 3) are designed to meet or exceed all applicable regulatory requirements, at all times, including NERC Reliability Standard FAC-003-4.

Table 4. NERC Minimum Vegetation Clearance Distance (MVCD)

Elevation (feet)	60/70 kV	115 kV	230 kV	500 kV
0–500 ft.	1.1 ft.	1.9 ft.	4.0 ft.	7.0 ft.
501–1000	1.1	1.9	4.1	7.1
1001–2000	1.1	1.9	4.2	7.2
2001–3000	1.2	2.0	4.3	7.4
3001–4000	1.2	2.0	4.3	7.5
4001–5000	1.2	2.1	4.4	7.6
5001–6000	1.2	2.1	4.5	7.8
6001–7000	1.3	2.2	4.6	7.9
7001–8000	1.3	2.2	4.7	8.1
8001–9000	1.3	2.3	4.8	8.2
9000–10000	1.4	2.3	4.9	8.3
10001–11000	1.4	2.4	5.0	8.5
11001–12000	1.4	2.5	5.1	8.6
12001–13000	1.5	2.5	5.2	8.8
13001–14000	1.6	2.6	5.3	8.9
14001–15000	1.6	2.7	5.4	9.1

Note: NERC minimum vegetation clearance distances are in NERC Reliability Standard FAC-003-4.

Appendix A, LiDAR Clearance Parameters

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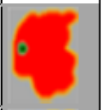
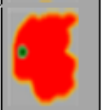
Table 1. Vegetation Detection Specifications

Tree Clearance Parameters						Clearance Distance (ft)				
Rank	Type	Status	Acronym	Description	Area of Application	500 kV	230 kV	115 kV	60 kV 70 kV	VMPI Polygon
1	As Flown Grow-In	URGENT	VC1U_AF	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance."	HFTD and Non HFTD	15	10	10	4	
2	Max Op Grow-In	URGENT	VC1U_MO	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance." Conductor is modeled under maximum operating conditions.	NERC only	15	10	10 (NERC only)	4 (NERC only)	
3	As Flown Grow-In	conformance	VC1c_AF	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance."	HFTD and Non HFTD	25	15	15	10	
4	Max-op Grow-In	conformance	VC1c_MO	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance." Conductor is modeled under maximum operating conditions.	HFTD and Non HFTD	25	15	15	10	
5	As Flown Grow-in	potential	VC1p_AF	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance."	HFTD and Non HFTD	40	25	25	15	

Tree Clearance Parameters						Clearance Distance (ft)				
Rank	Type	Status	Acronym	Description	Area of Application	500 kV	230 kV	115 kV	60 kV 70 kV	VMPI Polygon
6	Max-op Grow-in	potential	VC1p_MO	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance." Conductor is modeled under maximum operating conditions.	HFTD and Non HFTD	40	25	25	15	
7	As Flown OVERHANG (0 - 2 feet)	conformance	VC1c_OV	Vegetation above and within 2 ft. of the upward vertical plane of the conductor. Applies to Non High Fire Threat Districts only.	Non HFTD only	2	2	2	2	
7	As Flown OVERHANG (0 - 6 feet)	conformance	VC1c_OV	Vegetation above and within 6 ft. of the upward vertical plane of the conductor. Applies to High Fire Threat Districts only.	HFTD only	6	6	6	6	
8	As Flown OVERHANG (2 - 12 feet)	potential	VC1p_OV	Vegetation above and within 2 -12 ft. of the upward vertical plane of the conductor. Applies to Non High Fire Threat Districts only.	Non HFTD only	12	12	12	12	
8	As Flown OVERHANG (6 - 12 feet)	potential	VC1p_OV	Vegetation above and within 6-12 ft. of the upward vertical plane of the conductor. Applies to High Fire Threat Districts only.	HFTD only	12	12	12	12	
9	Modeled Blowout	conformance	VC1c_BO	Vegetation within a specified distance of the conductor based on line voltage as described in the columns under the header "Clearance Distance" where the conductor position is modeled at 56 mph wind.	HFTD and NERC only	10	6	4 (NERC only)	4 (NERC only)	

Tree Clearance Parameters						Clearance Distance (ft)				
Rank	Type	Status	Acronym	Description	Area of Application	500 kV	230 kV	115 kV	60 kV 70 kV	VMPI Polygon
10	Modeled Blowout	potential	VC1p_BO	Vegetation within a specified distance of the conductor based on line voltage as described in the columns under the header "Clearance Distance" where the conductor position is modeled at 56 mph wind.	HFTD and NERC only	15	12	10 (NERC only)	10 (NERC only)	
11	As Flown Fall-in (inside ROW)	conformance	VC2c_AF	Vegetation inside ROW capable of striking conductor as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	HFTD and Non HFTD	60	40	25	20	
12	As Flown Fall-in (outside ROW)	conformance	VC3c_AF	Vegetation outside ROW capable of striking conductor as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	HFTD and Non HFTD areas	>60	>40	>25	>20	
13	As Flown Fall-in Tower and Attachment (inside ROW)	routine	VC2r_AT	Vegetation inside ROW capable of striking tower or pole and any attached wires as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	HFTD and NERC only	60	40	25	20	
14	As Flown Fall-in Tower and Attachment (outside ROW)	routine	VC3r_AT	Vegetation outside ROW capable of striking tower or pole and any attached wires as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	HFTD and NERC only	>60	>40	>25	>20	

Tree Clearance Parameters						Clearance Distance (ft)				
Rank	Type	Status	Acronym	Description	Area of Application	500 kV	230 kV	115 kV	60 kV 70 kV	VMPI Polygon
15	As Flown Fall-in (inside ROW)	potential	VC2p_AF	Vegetation inside ROW as specified by the average half ROW width by voltage as described in columns under "Clearance Distance." Tree is tall enough to strike within 6 ft. of conductor.	HFTD and Non HFTD areas	60	40	25	20	
16	As Flown Fall-in (outside ROW)	potential	VC3p_AF	Vegetation outside ROW as specified by the average half ROW width by voltage as described in columns under "Clearance Distance." Tree is tall enough to strike within 6 ft. of conductor.	HFTD and Non HFTD	>60	>40	>25	>20	

Appendix A, LiDAR Clearance Parameters
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Table 2. Reference for Documentation of Detections When No Work Is Required

Note: LiDAR Detections Rank 1-16 require at least one Location Record to show proof of Span Inspection.

- LiDAR detection codes ranked 1, 2, 3, 4, 7, and 9 (NERC only) require a Tree Record, as shown in the table below.
- In some instances, the system of record may need a Tree Record with priority code **No Trim** to document proof of span inspection for LiDAR detection codes ranked 5, 6, 8, 9 (non-NERC only), 10, 11, 12, 13, 14, 15, and 16.

Rank	Risk Type	Status	Acronym	Description	Tree Record Documentation	Area of Application
1	As Flown Grow-In	URGENT	VC1U_AF	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance"	Tree record **required**	HFTD and Non HFTD
2	Max Op Grow-In	URGENT	VC1U_MO	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance". Conductor is modeled under maximum operating conditions.	Tree record **required**	NERC only
3	As Flown Grow-In	conformance	VC1c_AF	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance"	Tree record **required**	HFTD and Non HFTD
4	Max-op Grow-In	conformance	VC1c_MO	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance." Conductor is modeled under maximum operating conditions.	Tree record **required**	HFTD and Non HFTD
5	As Flown Grow-in	potential	VC1p_AF	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance"	Tree record not required	HFTD and Non HFTD
6	Max-op Grow-in	potential	VC1p_MO	Vegetation within a specified distance of the conductor based on line voltage as described in columns under the header "Clearance Distance." Conductor is modeled under maximum operating conditions.	Tree record not required	HFTD and Non HFTD
7	As Flown OVERHANG (0 - 2 feet)	conformance	VC1c_OV	Vegetation above and within 2 ft. of the upward vertical plane of the conductor. Applies to Non High Fire Threat Districts only.	Tree record **required**	Non HFTD only
7	As Flown OVERHANG (0 - 6 feet)	conformance	VC1c_OV	Vegetation above and within 6 ft. of the upward vertical plane of the conductor. Applies to High Fire Threat Districts only.	Tree record **required**	HFTD only

Rank	Risk Type	Status	Acronym	Description	Tree Record Documentation	Area of Application
8	As Flown OVERHANG (2 - 12 feet)	potential	VC1p_OV	Vegetation above and within 2 -12 ft. of the upward vertical plane of the conductor. Applies to Non High Fire Threat Districts only.	Tree record not required	Non HFTD only
8	As Flown OVERHANG (6 - 12 feet)	potential	VC1p_OV	Vegetation above and within 6-12 ft. of the upward vertical plane of the conductor. Applies to High Fire Threat Districts only.	Tree record not required	HFTD only
9	Modeled Blowout	conformance	VC1c_BO	Vegetation within a specified distance of the conductor based on line voltage as described in the columns under the header "Clearance Distance" where the conductor position is modeled at 56 mph wind.	Tree record **required (NERC Only)**	HFTD and NERC only
10	Modeled Blowout	potential	VC1p_BO	Vegetation within a specified distance of the conductor based on line voltage as described in the columns under the header "Clearance Distance" where the conductor position is modeled at 56 mph wind.	Tree record not required	HFTD and NERC only
11	As Flown Fall-in (inside ROW)	conformance	VC2c_AF	Vegetation inside ROW capable of striking conductor as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	Tree record not required	HFTD and Non HFTD
12	As Flown Fall-in (outside ROW)	conformance	VC3c_AF	Vegetation outside ROW capable of striking conductor as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	Tree record not required	HFTD and Non HFTD areas
13	As Flown Fall-in Tower and Attachment (inside ROW)	routine	VC2r_AT	Vegetation inside ROW capable of striking tower or pole and any attached wires as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	Tree record not required	HFTD and NERC only
14	As Flown Fall-in Tower and Attachment (outside ROW)	routine	VC3r_AT	Vegetation outside ROW capable of striking tower or pole and any attached wires as specified by the average half ROW width by voltage as described in columns under "Clearance Distance."	Tree record not required	HFTD and NERC only
15	As Flown Fall-in (inside ROW)	potential	VC2p_AF	Vegetation inside ROW as specified by the average half ROW width by voltage as described in columns under "Clearance Distance." Tree is tall enough to strike within 6 ft. of conductor.	Tree record not required	HFTD and Non HFTD areas
16	As Flown Fall-in (outside ROW)	potential	VC3p_AF	Vegetation outside ROW as specified by the average half ROW width by voltage as described in columns under "Clearance Distance." Tree is tall enough to strike within 6 ft. of conductor.	Tree record not required	HFTD and Non HFTD

REVISION REQUIREMENTS

To remain active document must be reviewed and approved annually within 1 month of anniversary of previous approval.

- **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.

Approval Requirements

Approval from QC leadership is required.

REVISION NOTES

Rev #	Date	Description
0	06/14/2023	Original Publication
1	09/21/2023	Text and formatting revisions
2	04/02/2024	Updated to match changes from execution transmission procedure change and changed team name to Quality Control VM

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