



Quality Control Vegetation Management Business Process Document

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SUMMARY

This utility Business Process Document (BPD) describes the requirements for the Pacific Gas and Electric Company (PG&E) Quality Control (QC) Program. The QC program has been designed and implemented to ensure the post Vegetation Management (VM) Execution work product meets the applicable procedural scope as it relates to quality and regulatory compliance. The QC Program monitors compliance with state laws, regulations, and commitments.

Level of Use: Informational Use

TARGET AUDIENCE

QC (Managers, Supervisors, QC Specialists, and Contractors)

TABLE OF CONTENTS

SUBSECTION	TITLE	PAGE
1	Regulatory Requirements and Commitments	1
2	Program Strategy	2
3	Quality Control Notes	4
4	Industry Standards and Arboriculture Practices	5
5	Routine Vegetation Management	5
6	Documenting QC Findings.....	5
7	Vegetation Inside a Substation, Generation Substation, or Switchyard.....	7
8	Data Integrity and Recordkeeping.....	7
9	Work Practice and Procedure	7

1 REGULATORY REQUIREMENTS AND COMMITMENTS

1.1 PG&E QC recognizes and adheres to the following Regulatory Requirements and recommendations:

- California Public Utilities Commission (CPUC) [General Order 95, Rule 35](#) (G.O. 95, Rule 35)
- [State of California Public Resources Code \(PRC\) 4293](#)
- Public Resource Code §4292. PRC 4292 applies in any mountainous land, forest-covered land, brush-covered land, or grass-covered land within SRAs and FRAs, unless specifically exempted by 14 CCR, section 1255.
- North American Electric Reliability Corporation (NERC) Standards for Vegetation Management.



Quality Control Vegetation Management Business Process Document

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Rev: 02



- FAC-003-04 Federal Energy Regulatory Commission (FERC), Order No. 777
- California [Code of Regulations \(CCR\), Title 14, sections 1250, 1251, 1252, 1253, 1256, 1257 and 1258](#)
- PG&E [Wildfire Mitigation Plan](#)

1.2 Program Strategy

The QC program strategy is to perform field reviews after VM Execution has completed their inspections and each scope has specific percentage of tree work completion to verify the applicable procedural scope was met for the VM program being evaluated. The timeliness of QC reviews is dependent on the VM program being evaluated and the specific execution work activity. To minimize customer touch points and to prioritize the QC review in areas where other inspections are not taking place, please see below.

Distribution In Scope includes:

- Work Order (WO) packets with all spans 100% VMI complete, with all VMI work completed in the current Calendar Year, from the current project plan and in the HFTD (Tier 2 and 3). QC should only review these completed WO's when they also have 85% or more of tree work prescriptions completed and documented within the VM System of Record. Additionally, QC should also perform a statistically valid sample of WO's started in the previous Calendar Year but completed in the current Calendar Year (Carryover Work), also prioritizing the WO's where at least 85% of the prescribed tree work has been completed.

Distribution Out of Scope includes:

- **Spans where 2nd Patrol, or next Routine inspection has begun**
- A Span is constrained due to accessibility, safety concerns, customer concerns or refusals
- Span is not accessible due to weather restrictions (Covered in snow, etc.).
- Span is constrained due to incomplete work, or other issues preventing an accurate inspection.

Transmission In Scope includes:

- Completed Source Side Device (SSD) Route locations, with all work completed in the current calendar year, from the current project plan and in the HFTD (Tier 2 and 3). QC should review these completed SSD Routes when they have at least 85% of the prescribed tree work completed and documented within the VM System of Record. Additionally, QC should also perform a statistically valid sample SSD Routes started in the previous calendar year but completed in the current calendar year (i.e. Rollover Work), also prioritizing the SSD Route locations where at least 85% of the prescribed tree work has been completed.



Quality Control Vegetation Management Business Process Document

MID Quality: 0002

Publication Date: 04/10/2024

Rev: 02



Transmission Out of Scope includes:

- Spans where 2nd Patrol, or next Routine inspection has begun
- Location is constrained due to accessibility, safety concerns, customer concerns, or refusals.
- Location is constrained due to weather restrictions (Covered in snow, etc.).
- Location is constrained due to incomplete work, or other issues preventing an accurate inspection.

Vegetation Control – Pole Clearing In Scope includes:

- Completed VC pole locations in the HFTD (Tiers 2 and 3) where work is completed in the current Calendar Year with the current project plan within the VM System of Record.

Vegetation Control – Pole Clearing Out of Scope includes:

- Any pole that was already verified by QC within the current calendar year.
 - Pole is constrained due to accessibility, safety concerns, customer concerns, or refusals.
 - Pole is constrained and due to weather restrictions (Covered in snow, etc.).
 - Pole is constrained due to incomplete work, or other issues preventing an accurate inspection.
- a. QC findings must be REPORTED to VM Execution to indicate positive trends and identify continuous improvement opportunities that require attention.
 - b. Execution is responsible for MONITORING QC findings and ensuring final closure in the QC system of record.
 - c. Notification of Priority/Hazard Trees
 - The VM Priority Tag Procedure, TD-7102P-17, pertains to overhead electric distribution primary conductors. It provides guidance for notifying and mitigating any vegetation observed to be a Priority 1 or Priority 2 condition (see Definitions, page 7, this document). Both internal and external QC personnel follow this procedure when priority trees are identified.
 - Transmission Vegetation Management Imminent Threat and Hazard Notification Procedure, TD-7103P-09. This utility procedure presents instructions for handling vegetation that is encroaching (or is threatening to encroach) into NERC minimum vegetation clearance distances and/or PG&E minimum clearance requirements for overhead electric transmission lines.



Quality Control Vegetation Management Business Process Document

MID Quality: 0002

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Rev: 02



The primary tasks for the PG&E QC leadership team (Managers, Supervisors, Seniors, Principals, and Data Analysts) are to:

- IDENTIFY and onboard new internal QC staff as needed.
- CONDUCT audits and benchmarking to ensure QC team adheres to the expectations set in this standard and supporting procedures.
- SUPPORT the internal and contract QC workforce with escalation of customer concerns, and mitigation of issues preventing work completion.

The primary tasks for the internal and contractor QC team are to:

- CONDUCT field review of QC-ready spans/locations/poles as assigned by the QC Supervisor/Senior QC Specialist and/or Data Analyst to evaluate and document the quality of work completed by VMI, VC Tech, and Tree Crew (TC).
- RECORD findings in the Quality Team system of record.

2 QUALITY CONTROL NOTES

2.1 The QC Specialist is responsible for:

- Reviewing overhead electric distribution primary and secondary facilities (excluding service drops) as directed in the Distribution Inspection Procedure (DIP), TD-7102P.
- Using assessment criteria for overhead electric transmission facilities as directed in the VM Transmission Routine Non-Orchard Patrol Procedure (TRPP), TD-7103P-01.
- Vegetation Control (VC) as defined in Vegetation Control Program (Standard), [TD-7112S](#), and as directed in the Vegetation Control Procedure (VCP), [TD-7112P-01](#).

2.2 QC Specialist makes one contact attempt to obtain access to the property. IF no response or the customer refuses access,

THEN the QC Specialist documents the access constraint in the survey.

- IF during patrol, QC Specialist identifies Private Facilities (PF),

THEN QC SPECIALIST NOTIFIES the QC Supervisor to inform the local Execution Vegetation Program Manager (VPM) to ENSURE adherence to the requirements of Procedure for Privately Owned Facilities TD-2015P-02.

- IF the QC Specialist observes vegetation that meets the Distribution Priority Tree definition,

THEN follow the instructions for notifying and mitigating any vegetation observed to a Priority 1 or Priority 2 for overhead distribution electrical facilities.

- IF the QC Specialist observes vegetation that meets the Transmission Vegetation Management Imminent Threat and Hazard Notification Procedure, TD-7103P-09.



Quality Control Vegetation Management Business Process Document

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Rev: 02



THEN follow the instructions for handling vegetation that is encroaching (or is threatening to encroach) into NERC minimum vegetation clearance distances and/or PG&E minimum clearance requirements for overhead electric transmission lines.

3 INDUSTRY STANDARDS AND ARBORICULTURE PRACTICES

3.1 The PG&E vegetation management program supports and employs the following industry standards and best management practices:

- International Society of Arboriculture (ISA) Best Management Practices (BMPs).
- ANSI A300 Part 9, "[Tree Risk Assessment](#)", by E. Thomas Smiley, Nelda Matheny, and Sharon Lilly and its companion publication, "[Utility Tree Risk Assessment](#)", by John W Goodfellow, that describes the levels and scope of tree risk assessment.
- [Cal Fire Power Line Fire Prevention Field Guide](#) that describes an approach to conducting tree inspections.

3.2 Routine Vegetation Management

a. Program Description – Routine QC Project Review

- QC includes internal and external contractor staff that are qualified to perform a post VM work execution review of overhead electric transmission and distribution circuits, and stand-alone secondary lines (excluding service drops). QC Specialists focus their reviews predominantly in HFTD areas after tree work completion. Qualifications are: Bachelor's degree in job-related discipline or equivalent experience, plus three years of job-related experience.
- The QC Specialist will identify any non-listed trees that do not conform to the Transmission Routine Patrol procedure, Distribution Inspection Procedure, Vegetation Control procedure and report as QC Findings to the Execution Team to implement necessary corrective action(s).

b. Planning and Scheduling

- Planning is conducted in the fourth quarter of each year for the following year. The planning process includes working toward 100 percent QC verification in HFTD projects to review and the QC scope criteria in collaboration with VM Execution and other stakeholders.
- Annual planning may also adjust to align with new commitments defined in the WMP and the General Rate Case (GRC) for the following year.
- For new requests of QC beyond the current work plan, the Quality Management (QM) and System Inspections (SI) Intake Process ([Intake link](#)) will be followed.

3.3 Documenting QC Findings

- RECORD findings for encroaching vegetation that is not currently prescribed for work AND may not maintain Minimum Clearance Distance/Minimum Distance



Quality Control Vegetation Management Business Process Document

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Rev: 02



Requirement (MCD/MDR) compliance for 13 months for Routine Distribution and Routine Transmission, and 15 months for Focused Tree Inspection (FTI) from the prior VMI routine inspection date. For VC, record finding as not meeting scope of work.

THEN, the QC Specialist:

- DETERMINES which option below predominantly applies to the tree condition and REPORTS QC findings in the QC System of Record.

PG&E Minimum Clearance Distances

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

Note: The PG&E-defined minimum clearance distances are designed to meet or exceed all applicable regulatory requirements, including NERC Reliability Standard FAC-003-4 and CPUC GO 95, Rule 35.

CPUC Minimum Clearance Distance Requirements and Recommendations

	60 or 70 kV	115 kV	230 kV	500 kV
CPUC Requirement (Case 13)	1.5 ft.	1.6 ft.	2.6 ft.	9.6 ft.
CPUC Recommendation at Time of Trim	4 ft.	10 ft.	10 ft.	15 ft.
CPUC Requirement in HFTD (Case 14)	4 ft.	10 ft.	10 ft.	10 ft.
CPUC Recommendation at Time of Trim in HFTD	12 ft.	30 ft.	30 ft.	30 ft.

Note: The CPUC minimum clearance distances are in CPUC GO 95, Table 1 and Appendix E. Reasonable vegetation management practices may make it advantageous for the purposes of public safety or service reliability to obtain greater clearances than those in this table to ensure compliance until the next scheduled maintenance.

Minimum Distance Requirements (MDR)				
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



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Rev: 02



Minimum Distance Requirements (MDR)				
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.

3.4 Vegetation Inside a Substation, Generation Substation, or Switchyard

- IF QC Specialist finds vegetation inside substation, generation substation, or switchyard that requires tree work,

THEN QC Specialist should inform QC Supervisor to notify local Execution VPM.

4 DATA INTEGRITY AND RECORDKEEPING

4.1 QC uses the following systems of record to record its activities:

- ArcGIS Field Maps Application
- Survey123

4.1 Work Practice and Procedure

- Quality Control is performed in accordance with the QC Standard, QC Contract Specifications, Distribution Procedure, Transmission Procedures, VC Procedure, and QC Procedure.

END of Instructions



Quality Control Vegetation Management Business Process Document

MID Quality: 0002

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Rev: 02



DEFINITIONS

Constraint: A condition where a property cannot be accessed due to customer access or contact issues, weather, accessibility, safety concerns, other inspections are in progress, all work is not complete, or there are other issues that prevent an accurate inspection.

Facilities (Transmission): The components of the electric transmission line overhead system, including conductors (from 60 kV to 500 kV), steel structures, non-steel structures, insulators, switches, and substations. Refer to TD-8101, "Transmission Line Overhead Asset Management Plan," for additional details.

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.

Priority Conditions: Priority 1 condition is a hazard that meets any of the following scenarios: The vegetation is in contact or showing signs of previous contact with a primary conductor. The vegetation is actively failing or at immediate risk of failing and could strike the facilities. The vegetation presents an immediate risk to the facilities.

Priority 2 condition meets at least one of the following scenarios:

The vegetation has encroached within the PG&E minimum clearance requirements and is not in contact with a conductor. The vegetation has an identifiable integrity issue that does not classify as a Priority 1 condition, is likely to strike facilities, and may manifest into a risk before the next scheduled inspection.

Minimum Clearance Distance (MCD): The PG&E-defined minimum clearance distances are designed to meet or exceed all applicable regulatory requirements, including NERC Reliability Standard FAC-003-4 and CPUC GO 95, Rule 35

Minimum Distance Requirement (MDR): Distance to maintain separation between vegetation and distribution conductors in LRAs, State Responsibility Areas (SRAs) and California's HFTD, in accordance with CPUC General Order (G.O.) 95, Rule 35 and Public Resource Code (PRC) 4293.

IMPLEMENTATION RESPONSIBILITIES

QC Managers are responsible for the development and communication of this procedure to QC Supervisors, as well as the periodic review of this document. The QC Supervisors are responsible for the distribution of this procedure by providing training and conducting regular reviews to ensure adherence.

GOVERNING DOCUMENT

Utility Policy TD-05, "[Vegetation Management Policy](#)"



Quality Control Vegetation Management Business Process Document

MID Quality: 0002

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Rev: 02



COMPLIANCE REQUIREMENT/REGULATORY COMMITMENT

Records and Information Management:

Information or records generated by this procedure must be managed in accordance with the Enterprise Records and Information (ERIM) program Policy, Standards and Enterprise Records Retention Schedule (ERRS). REFER [GOV-7101S, "Enterprise Records and Information Management Standard"](#) and related standards. Management of records includes, but is not limited to:

- Integrity
- Storage
- Retention and Disposition
- Classification and Protection

REFERENCE DOCUMENTS

Developmental References: N/A

Supplemental References:

- Transmission Vegetation Hazard Notification Procedure: TD-7103P-09
- Distribution Inspection Procedure (DIP): TD-7102P-01
- Transmission Inspection Procedure (TIP): TD-7103P-01
- Vegetation Control Procedure: TD-7112P-01
- Vegetation Management Priority Tag Procedure: TD-7102P-17

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REVISION NOTES

Rev #	Date	What Changed?
00	08/18/2023	New document, formatted to Guidance Document Management (GDM) requirements.
01	2/26/2024	Formatting and Scope of Work updated for 2024
02	4/10/2024	Change in bullet under "Transmission In Scope" on pg. 2.