

# Vegetation Management Transmission Program

## SUMMARY

The Pacific Gas and Electric Company (PG&E) Transmission Vegetation Management (VM) program maintains vegetation clearance in accordance with California Public Utilities Commission (CPUC) General Order 95, Rule 18 and Rule 35, California Public Resource Code (PRC) Sections 4293 and 4295.5, North American Electric Reliability Corporation (NERC) Reliability Standard for Transmission Vegetation Management, FAC-003-5, and other applicable regulations.

This program also intends to prevent encroachment into the NERC minimum vegetation clearance distances (MVCD) and the PG&E-defined minimum clearance distances while reducing the risk of reasonably foreseeable outages and fire ignitions.

## TARGET AUDIENCE

Vegetation Asset Strategy and Analytics (VASA)

VM Organization supporting Transmission

Quality Management (QM)

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## Vegetation Management Transmission Program

### REQUIREMENTS

#### 1 Regulatory Requirements

##### 1.1 NERC Reliability Standard FAC-003-5 requires a Transmission owner to:

1. Manage vegetation to prevent encroachments into the minimum vegetation clearance distance (MVCD). Appendix A, "Clearance Distance Tables," presents the FAC-003-5 minimums and PG&E guidelines for determining clearance distances to always maintain separation between vegetation and Transmission conductors (FAC-003-5 requirements R1).
2. Have documented maintenance strategies to prevent encroachment into the NERC MVCD (FAC-003-5 R3).
3. Notify the regulator (Western Electricity Coordinating Council) and mitigates a vegetation condition that is likely to cause a fault at any moment (an imminent threat) (FAC-003-5 R4).
4. Take corrective actions to prevent encroachment into the MVCD when work is constrained (FAC-003-5 R5).
5. Perform annual inspection each calendar year of all applicable line miles, with the time between inspections not exceeding 18 months (FAC-003-5 R6).
6. Complete identified tree work within the calendar year (FAC-003-5 R7).
  - a. Exceptions are allowable if they meet the acceptable variance criteria specified in Requirement 7 of FAC-003-5 (see below).
    - Example 7.1. Change in expected growth rate/environmental factors
    - Example 7.2. Circumstances that are beyond the control of an applicable Transmission Owner (TO) or applicable Generator Owner (GO), including but not limited to natural disasters such as earthquakes, fires, tornados, hurricanes, landslides, ice storms, floods, or major storms as defined either by the TO or GO or an applicable regulatory body.
    - Example 7.3. Rescheduling work between growing seasons.
    - Example 7.4. Crew or contractor availability/mutual assistance agreements.
    - Example 7.5. Identified unanticipated high priority work.
    - Example 7.6. Weather conditions/accessibility.
    - Example 7.7. Permitting delays.
    - Example 7.8. Land ownership changes/change in land use by the landowner.

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- Example 7.9. Emerging technologies.
  - b. PG&E requires approval of these exceptions by a senior manager.
7. California Public Utilities Commission (CPUC) General Order 95, Rule 35 (GO 95, Rule 35)
    - a. GO 95, Rule 35 requires utilities to establish certain clearances as set forth in GO 95, Table 1, Cases 13 and 14 and as further described in GO 95, Appendix E.
    - b. Appendix E recommends a minimum 12-feet of clearance at time of trim in High Fire-Threat Districts (HFTDs) and a minimum of 4-feet of clearance at time of trim in other areas, for lines operating between 2,400 and 71,999 volts. Appendix E states that obtaining greater clearances through reasonable vegetation management practices may be advantageous for the purposes of public safety or service reliability.
  8. GO 95, Rule 18 outlines priority levels for the resolution of GO 95 violations and Safety Hazards. GO 95, Appendix I provides examples of Rule 18 priority levels and Safety Hazards.
  9. CPUC Resolution ESRB-4 (June 12, 2014) directs investor-owned electric utilities to take remedial measures to reduce the likelihood of fires started by or threatening utility Facilities.
  10. California Public Resource Code (PRC), sections 4293 and 4295.5.
  11. California Code of Regulations (CCR), Title 14, sections 1250, 1251, 1252, 1253, 1256, 1257 and 1258.
    - a. Title 14 CCR Section 1250 and 1251
    - b. Title 14 CCR Sections 1252 and 1253 describe where and when PRC 4293 applies - in any mountainous land, forest-covered land, brush-covered land or grass-covered land within State Responsibility Areas (SRAs) and United States Forest Service Federal Responsibility Areas (USFS-FRAs) during the declared fire season.
    - c. Title 14 CCR Section 1256 describes how to measure minimum clearances required by PRC 4293.
    - d. Title 14 CCR 1257 describes exemptions to the minimum clearance provisions of PRC 4293.
    - e. Title 14 CCR 1258 clarifies that the requirements of PRC 4293 also apply to conductors fastened to living, sound trees.

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12. The California Independent System Operator (ISO) Transmission Control Agreement (TCA). For more information, refer to Utility Standard RISK-6340S, "Electric CAISO Maintenance Practice Compliance Program."

### 2 PG&E Requirements and Expectations

- 2.1 Transmission Annual Patrol inspects all overhead electric Transmission Facilities (NERC and non-NERC, including idle, de-energized, foreign-owned Facilities with known vegetation maintenance agreements, reduced voltage lines, and energized Substation equipment) in the PG&E service territory.
  1. Annual inspection uses light detection and ranging (LiDAR) technology to identify potential tree risk informed by vegetation clearance distances and vegetation proximity to Transmission assets. LiDAR detections are described in Utility Procedure [TD-7103P-01, "Vegetation Management Transmission Inspection Procedure."](#)
    - a. NERC inspections cannot exceed 18 months between inspections and must occur each calendar year.
  2. Ground patrols are informed by the LiDAR detections identified.
    - a. NERC inspections cannot exceed 18 months between inspections and must occur each calendar year.
  3. Potential tree work population is identified through the analysis of the LiDAR-collected data and the results of the follow-up ground patrol.
    - a. NERC tree work must be completed by December 31 of each year, with exceptions approved as in Section 1.1.2.
  4. Commercial nut-producing orchards (i.e., almond and walnut) are inspected by ground patrols.
    - a. LiDAR informs Minimum Ground to Conductor Clearances (MGCC) in orchard spans.
- 2.2 Second Patrol inspects all overhead electric Transmission Facilities (including idle) within defined geographic areas of HFTD and HFRA.
- 2.3 Prescriptions adhere to the regulations in Section 1, "Regulatory Requirements," and rely on the criteria and guidance in Appendix A, "Clearance Distances," specifically:
  1. Identify and act with respect to the following conditions:
    - a. Vegetation that has or may encroach the PG&E minimum clearance distance based on the anticipated growth rate before the next annual work cycle (see Table 1 in Appendix A).

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- b. Vegetation (categorized as either a whole tree or portion of tree) that May Fall Into or otherwise Impact PG&E electric Facilities.
2. To the fullest extent possible, prescribe tree work to achieve full enjoyment of the applicable Transmission right-of-way (ROW) easement document or agreement associated with the property parcel.
  - a. The desired outcome is to fell incompatible trees-when tree work is required.
3. When the Transmission ROW easement is insufficient to maintain growth-related minimum distance clearances, a VM representative should explore solutions with [Land Rights Services](#). Refer to the [Overhead Transmission Line Design Criteria](#) for details on Transmission asset construction that determines the Transmission ROW width.
4. When listing a tree for work:
  - a. Felling of vegetation and resprout treatment is preferred, especially for palm trees.
  - b. Century plants must be listed for felling.
  - c. Overhangs must be listed for work, clear to sky.
  - d. If pruning is required, prescribe multiple years of vegetation clearance. At a minimum, prescribe one year of clearance.
  - e. Prescribe felling for vegetation that would require bi-annual (twice yearly) pruning.
  - f. Where safe and practical, work must be prescribed, and tree cuts must be made, in accordance with ANSI A300 Tree Care Standards.
5. Inspect vegetation around PG&E Transmission Substations (including generation stations and switchyards) for the following conditions:
  - a. Vegetation encroachments toward conductors or energized equipment inside the fence line or entering/exiting the Facilities.
  - b. Vegetation (categorized as either a whole tree or portion of tree) that May Fall Into or otherwise Impact PG&E electric Facilities.
6. Inspect the Transmission conductors, Distribution conductors, and energized equipment inside Substations.
  - a. Prescribe felling or pruning for incompatible vegetation, maintaining clearances from Substation energized equipment.

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7. When a third-party utility or non-utility third party causes a condition that negatively impacts PG&E's Facilities is observed, then follow Utility Standards [TD-2014S, "Third-Party Notification and Resolution of Potential Violations and Safety Hazards"](#) and [TD-2015S, "Notification to Third-Party Non-Utility of Nonconformance."](#)
- 2.4 Tree work adheres to the regulations in Section 1, "Regulatory Requirements," to maintain PG&E Minimum Clearance Distance (see Table 1 in Appendix A) around overhead electric Transmission conductors (including idle) at any position of the conductor, rated 60 kV and above, specifically:
    1. Completion of all NERC-related vegetation work within the calendar year is required.
      - a. Exceptions are allowable if they meet the acceptable variance criteria specified in Requirement 7 of FAC-003-5 and receive approval by VM Operations leadership.
      - b. PG&E requires approval of exceptions by a senior manager.
    2. Obtain minimum clearances specific to the asset voltage rating including Underbuilt Distribution Facilities, (for Transmission lines refer to Appendix A and for Distribution lines refer to Utility Standard [TD-7102S, "Vegetation Management Distribution Program"](#)).
    3. When completing vegetation work:
      - a. Felling is preferred, instead of pruning, especially for palm trees and century plants.
      - b. When pruning, multiple years of vegetation clearance is desired. At a minimum, one year of vegetation clearance is achieved.
      - c. Where safe and practical, work must be prescribed, and tree cuts must be made, in accordance with ANSI A300 Tree Care Standards.
    4. To the fullest extent possible, tree work achieves full enjoyment of the applicable Transmission right-of-way (ROW) defined in the easement document or agreement associated with the property parcel.
      - a. The desired outcome is to fell incompatible trees-when tree work is required.
    5. Perform tree work to mitigate vegetation (categorized as either a whole tree or portion of a tree) that is imminent and probable to fall into or otherwise impact PG&E electric Facilities (including idle), following regulations in Section 1, "Regulatory Requirements."
    6. Use herbicides to prevent resprouting after felling trees where possible.
  - 2.5 Specific expectations for commercial orchards and crops, such as walnuts and almonds, are adhered to. The following requirements improve system reliability through near-term reclamation of the ROW and manage potential future workload by eliminating new plantings:

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1. Fell all incompatible nut trees in production orchards that are under overhead electrical Transmission Facilities.
2. Continue to inspect and prune existing incompatible trees until trees are felled.
3. Attempt to prevent and fell newly planted incompatible orchards (e.g., walnut, almond) in the ROW by engaging and educating the customer and stakeholders.

### 3 Roles and Responsibilities

- 3.1 The Vegetation Asset Strategy and Analytics (VASA) team is responsible for Scope of Work development.
- 3.2 The VM Operations team is responsible for creating procedures and processes to meet the expectations in this standard and to support compliance with the regulatory requirements and for the execution of day-to-day operational tasks to meet the expectations in this standard and compliance obligations.
  1. The primary responsibilities for the VM Operations leadership team are to:
    - a. Monitor and manage adherence to the inspection and tree work schedule throughout the year to ensure compliance and prevent encroachment into minimum clearance requirements.
    - b. Support the workforce to manage and resolve constraints and interference, mitigation of issues preventing work completion, adherence to the expectations set in this standard and supporting procedure.
  2. The primary responsibility for the LiDAR Contract Partner(s) are to identify vegetation in proximity to Transmission overhead assets.
- 3.3 The primary responsibility for the Vegetation Management Inspectors (VMIs) is to inspect and prescribe necessary vegetation work in accordance with regulatory obligations and industry and PG&E standards.
- 3.4 The primary responsibility for Tree Crews (TCs) is to review clearance prescriptions and execute tree work in accordance with regulatory obligations and industry and PG&E standards.
- 3.5 The Quality Management team conducts work performance reviews and assessments, verification of work completion, and quality assurance audits.

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### 4 Industry Standards and Arboriculture Practices

- 4.1 The PG&E VM program must consider the use of industry standards and best management practices, such as, but not limited to, the documents listed in the Reference Documents section which states that “PG&E Data, Information, and Records are company assets that must be traceable, verifiable, accurate, and complete and can be retrieved upon request. Functional Areas are responsible for complying with the Information & Records Governance Policy, Standards, and the Information and Records Retention Schedule. Refer to [GOV-7101S, “Enterprise Records and Information Management Standard”](#) for further guidance or contact Information & Records Governance at [Information&RecordsGovernance@pge.com](mailto:Information&RecordsGovernance@pge.com).”

### 5 Utility Arboriculture Cycles

- 5.1 Annual Patrol and Second Patrol VM activities occur based on two utility arboriculture cycles, Inspection Cycle and Work Cycle.
- 5.2 During the Inspection Cycle, vegetation is inspected for adherence to the regulatory requirements and recommendations in Section 1, “Regulatory Requirements,” and PG&E requirements and expectations in Section 2, “PG&E Requirements and Expectations.”
1. As necessary, tree work prescriptions are made to ensure that vegetation remains in compliance.
  2. Annual Patrol cycle stabilization is performed to maintain compliance and manage risk.
  3. Deviations from an annual patrol cycle need to be documented.
  4. The Annual Patrol cycle is planned on an annual timeline but allows for unforeseen schedule changes to the cycle if a constraint or external factors is documented.
  5. All NERC and non-NERC lines are inspected.
  6. Second Patrol inspections are intended to check HFTD/HFRA areas for changing conditions that require vegetation work before the next routine inspection.
  7. Vegetation Management Pre-Inspection services in PG&E service territory should follow expectations described in [SPECIFIC CONDITIONS NO. 4851 FOR VEGETATION MANAGEMENT PRE-INSPECTION SERVICES](#).
- 5.3 During the Work Cycle, vegetation pruning and felling of trees is performed to ensure compliance with the regulatory requirements and recommendations in Section 1, “Regulatory Requirements,” and PG&E requirements and expectations in Section 2, “PG&E Requirements and Expectations.”
1. The work is to be completed prior to vegetation breaching compliance.



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- a. An imminent threat must receive an immediate response. An imminent threat is a vegetation condition affecting NERC Transmission lines that is likely to cause a fault at any moment or vegetation that is within the NERC Minimum Vegetation Clearance Distances (MVCD). See Utility Procedure [TD-7103P-09, "Transmission Vegetation Management Imminent Threat and Hazard Notification Procedure."](#)
- b. Vegetation at or approaching PG&E minimum clearances must receive an urgent response. See Utility Procedure [TD-7103P-09, "Transmission Vegetation Management Imminent Threat and Hazard Notification Procedure."](#)
2. This cycle is planned on an annual timeline but allows for unforeseen schedule changes to the cycle if a constraint or interference is documented by Operations.
3. Unless a constraint or external factors is documented, tree work must be completed within one year of identification.

### 6 Annual Planning

- 6.1 Workplans are created and documented annually in advance of initiation of the Inspection Cycle by VASA.
- 6.2 This process identifies the scope of work, including any new NERC lines, and opportunities to adjust the schedule based on the most current data and information available. Data and information available can include, but is not limited to, ETGIS data, risk models, predictive models, input or requests from local experts, environmental considerations, tree species growth or failure rates, outage and ignition data, and coordination with wildfire mitigations outside vegetation management.
- 6.3 An annual assessment of NERC lines will be provided by the PG&E Transmission Planning team, disseminated to VASA and VM Operations through the common inbox: [NERC-TPL-001-TP@pge.com](mailto:NERC-TPL-001-TP@pge.com).
  1. VASA will incorporate the annual assessment results into the Vegetation Management annual scope of work.

### 7 Records Management and Data Integrity

- 7.1 The Transmission Vegetation Management Program is required to document its work and to create and complete records per the "Information and Records Management" section.

### 8 Exceptions

- 8.1 Variances to this standard must be approved by the Vegetation Management Vice President and the Wildfire and Enterprise Risk Management Officer.

### END of Requirements

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### DEFINITIONS

**Constraint:** A situation that occurs when an environmental concern or local government or agency obstructs or delays PG&E inspection work or the completion of the intended tree work.

**Contract Partner:** Company directly hired by PG&E to complete a specific Scope of Work or service. This term also applies to all subcontract partners, at any tier, which have been retained by a primary PG&E contract partner to provide a service for PG&E related project work. Additionally, the term “subcontract partner” may include an individual, a group of workers (crew), equipment or other items used on a PG&E facility, project, or assets.

**Easement:** An interest in land owned by another person or entity that gives the owner of the easement limited right to that land for a specific, defined purpose. It is a non-possessory, restricted right for a specific use or activity on the land of another that is less than ownership. Used interchangeably with Right-of-Way definition.

**External Factors:** Events and conditions that are beyond the control of Vegetation Management.

**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.

**Felling:** Dropping or cutting down a tree.

**Functional Area (FA):** Line of business

**High Fire Risk Area (HFRA):** A purpose-built map for use in scoping Public Safety Power Shutoff events identifying areas where risk factors for the potential of catastrophic fire from utility infrastructure ignition during offshore wind events is higher.

**High Fire-Threat District (HFTD):** High Fire-Threat District means those areas comprised of the following:

- (1) Zone 1 is Tier 1 of the latest version of the United States Forest Service (USFS) and CAL FIRE’s joint map of Tree Mortality High Hazard Zones (HHZs). (Note: The Tree Mortality HHZs Map may be revised regularly by the USFS and CAL FIRE.)
- (2) Tier 2 is Tier 2 of the CPUC Fire-Threat Map.
- (3) Tier 3 is Tier 3 of the CPUC Fire-Threat Map.

**Idle Transmission Facilities:** Facilities that are not currently being used to serve Transmission load or generation Facilities. Idle Facilities can be either Transmission line Facilities that are deenergized or Facilities that are energized at Distribution voltages. Refer to Utility Procedure [TD-1003P-01, “Management of Idle Electric Transmission Line Facilities,”](#) for additional details. These Facilities remain in the scope of Annual and Second Patrol.

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**Imminent Threat:** A vegetation condition affecting NERC Transmission lines where it has been identified and confirmed by PG&E personnel and/or Contract Partners that the vegetation condition is likely to cause a fault at any moment. This condition can arise from within the right-of-way (ROW) if vegetation is encroaching into the Minimum Vegetation Clearance Distances (MVCD), or from outside the ROW due to potential tree or limb failure.

**Impact:** To strike a target or cause a disruption that affects activities.

**Inspection:** An organized and systematic examination.

**Interference:** Situations where the Customer/Property Owner:

- Interferes with access to the property (e.g., the Customer/Property Owner physically blocks access to the property, the Customer/Property Owner verbally threatens the VM representative, etc.);
- Interferes with completion of identified tree work as defined in the [TD-7102P-01 "Vegetation Management Distribution Inspection"](#) procedure (e.g., the Customer/Property Owner gets in the work zone, creates unsafe working condition, calls the police department and creates hostile environment to work, or threatens harm);

AND/OR

- Wants to Hire Own Contractor (HOC) or do work themselves.

**LiDAR (Light detection and ranging):** Technology that uses laser pulses to determine highly accurate measurements between objects. For the PG&E VM program, LiDAR is used to assess vegetation conditions, particularly distances and clearances in relation to the electric conductors, structures, and easement boundaries.

**May Fall Into:** Tree failure where vegetation (categorized as a whole tree or portion of a tree) has the likelihood of impacting PG&E Facilities during reasonably foreseeable conditions.

**NERC Minimum Vegetation Clearance Distance (MVCD):** Minimum vegetation clearance distance required to prevent flashover. However, prudent vegetation maintenance practices dictate that substantially greater distances will be achieved at time of vegetation maintenance. See Appendix A, "Clearance Distances."

**NERC-Regulated Transmission Lines (NERC lines):** Transmission lines operated at 200 kV or higher and certain sub-200 kV lines that are elements of a Major Western Electric Coordinating Council (WECC) Major Transfer Path (MTP).

**Overhang:** A tree and/or limb breaking the vertical plane of the outside conductor. As part of both routine and other Transmission VM operations, management of overhang is accomplished by removing limbs substantially beyond the vertical plane.

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**PG&E Minimum Clearance Distance:** PG&E-defined minimum clearance designed to always meet or exceed all applicable regulatory requirements. See Appendix A, "Clearance Distances."

**Prescription:** A recommendation of tree work to be performed. Information provided typically includes the type of pruning (e.g., top trim or side trim), how much of the tree to prune, and any other information that would be helpful for the tree crew.

**Prune (Trim):** Removing branches from a tree or other plant using approved practices, to achieve a specified objective

**Right-of-Way (ROW):** See Easement.

**Substation:** An assemblage of equipment for purposes of switching and/or changing or regulating the voltage of electricity. Substations that simply connect two or more Transmission circuits without transforming the voltage are called switching stations.

**Underbuilt:** Electric Distribution lines located directly under and parallel with Transmission lines and attached to the same pole or structure.

### IMPLEMENTATION RESPONSIBILITIES

The Vegetation Asset Strategy and Analytics team is responsible for the development and communication of this standard to VM Operations leadership, as well as the periodic review of this document.

VM Operations leadership is responsible for the distribution of this standard by providing training and conducting regular reviews to ensure adherence.

### GOVERNING DOCUMENT

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

### COMPLIANCE REQUIREMENT / REGULATORY COMMITMENT

California Public Utilities Commission (CPUC), [General Order 95, Rule 35](#)

California Public Utilities Commission (CPUC), [General Order 95, Rule 35 in Appendix E](#)

California Public Utilities Commission (CPUC), [CPUC General Order 95, Rule 18](#)

California Public Utilities Commission (CPUC), [General Order 95, Rule 18 in Appendix I](#)

California Public Utilities Commission (CPUC) [Table 1 \(Cases 13 and 14\)](#)

[California Public Utilities Commission \(CPUC\) Resolution ESRB-4 \(June 12, 2014\)](#)

California Public Resources Code (PRC), sections [4293](#) and [4295.5](#)

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[California Code of Regulations \(CCR\), Title 14, sections 1250, 1251, 1253, 1256, 1257 and 1258](#)

North American Electric Reliability Corporation (NERC) Reliability Standard [FAC-003-5](#)

California Independent System Operator (CAISO) [Transmission Control Agreement](#)

### INFORMATION AND RECORDS MANAGEMENT

PG&E Data, Information, and Records are company assets that must be traceable, verifiable, accurate, and complete and can be retrieved upon request. Functional Areas are responsible for complying with the Information & Records Governance Policy, Standards, and the Information and Records Retention Schedule. Refer to [GOV-7101S, "Enterprise Records and Information Management Standard"](#) for further guidance or contact Information & Records Governance at [Information&RecordsGovernance@pge.com](mailto:Information&RecordsGovernance@pge.com).

### REFERENCE DOCUMENTS

Developmental References:

[California Power Line Fire Prevention Field Guide](#)

ANSI A300, "Tree Care Standards," Tree Care Industry Association (TCIA)

International Society of Arboriculture (ISA) Best Management Practices, "Pruning," "Utility Pruning of Trees," "Integrated Vegetation Management," "Tree Risk Assessment," and "Utility Tree Risk Assessment"

Utility Arborist Association (UAA), Utility Best Management Practices, ["Tree Risk Assessment and Abatement for Fire-Prone States and Provinces in the Western Region of North America"](#)

Supplemental References:

[RISK-6301S, "Quality Management Audit Standard"](#)

[RISK-6340S, "Electric CAISO Maintenance Practice Compliance Program"](#)

[TD-1003P-01, "Management of Idle Electric Transmission Line Facilities"](#)

[TD-2014S, "Third-Party Notification and Resolution of Potential Violations and Safety Hazards"](#)

[TD-2015S, "Notification to Third-Party Non-Utility of Nonconformance"](#)

[TD-7103P-01, "Vegetation Management Transmission Routine Inspection Procedure"](#)

[TD-7103P-01-Att01, "Transmission Substation Inspection"](#)

[TD-7103P-09, "Transmission Vegetation Management Imminent Threat and Hazard Notification Procedure"](#)

## Vegetation Management Transmission Program

[TD-7111S, "Transmission Right-of-Way \(ROW\) Maintenance and ROW Expansion Programs"](#)

[TD-7112S, "Vegetation Control Program"](#)

[Overhead Transmission Line Design Criteria](#)

[SPECIFIC CONDITIONS NO. 4851 FOR VEGETATION MANAGEMENT PRE-INSPECTION SERVICES \(November 21, 2023\).](#)

### APPENDICES

Appendix A, Clearance Distances

### ATTACHMENTS

NA

### DOCUMENT REVISION

TD-7103S, "Transmission Vegetation Management Program," rev. 3, 09/22/2023

### DOCUMENT APPROVERS

Angela Sanford, VP, Vegetation Management

### DOCUMENT OWNERS

██████████, Director, Vegetation Asset Strategy and Analytics

In Concurrency:

██████████, Director, Execution South and Transmission, Vegetation Management

### DOCUMENT CONTACTS

██████████ Principal Asset Management Specialist, Vegetation Asset Strategy and Analytics

██████████, Senior Business Analyst, Vegetation Asset Strategy and Analytics

## Vegetation Management Transmission Program

### REVISION NOTES

<b>Where</b>	<b>What Changed</b>
Entire Document	NERC FAC-003-5 citations and links updated from FAC-003-4.
Step 2.3.3	Added statement about Land Rights Services. Deleted reference to obsolete procedure TD-1005P-01.
Step 2.4	Updated Substation information.
Step 5.2.7	Added reference to SPECIFIC CONDITIONS NO. 4851 FOR VEGETATION MANAGEMENT PRE-INSPECTION SERVICES.
Step 6.3	Annual assessment of NERC lines added.
Definitions	Updated definitions.

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### Appendix A, Clearance Distances

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**Table 1. PG&E Minimum Clearance Distances**

	60 or 70 kV	115 kV	230 kV	500 kV
<b>PG&amp;E Minimum Clearance Distance</b>	4 ft.	10 ft.	10 ft.	15 ft.

**Note:** The PG&E-defined minimum clearance distances are designed to meet or exceed all applicable regulatory requirements, including NERC Reliability Standard FAC-003-5 and CPUC GO 95, Rule 35.

**Table 2. CPUC Minimum Clearance Distance Requirements and Recommendations**

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



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### Appendix A, Clearance Distances

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**Table 3. NERC Minimum Vegetation Clearance Distance (MVCD)**

Elevation (feet)	60 or 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:** The NERC minimum vegetation clearance distances are in NERC Reliability Standard FAC-003-5, [Table 2](#). The distances in this table are the minimums required to prevent flashover. However, prudent vegetation maintenance practices dictate that substantially greater distances will be achieved at time of vegetation maintenance.