



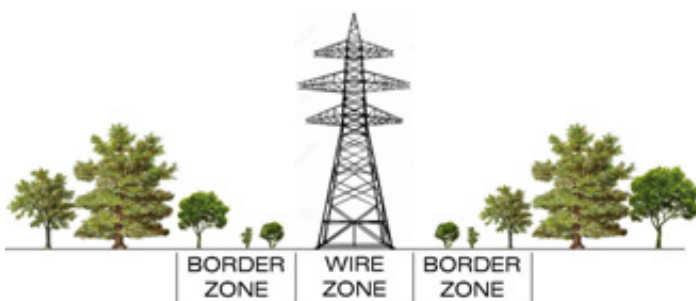
# Power Transmission Vegetation Management Guide

The San Francisco Public Utilities Commission (SFPUC) owns almost 250 miles of power transmission and distribution lines. Hetch Hetchy Water and Power (HHWP), a division of the SFPUC, is responsible for operating and maintaining these electric transmission line corridors located in the SFPUC right-of-way (ROW). The ROW varies in width from about 80 feet to 300 feet. Vegetation growing in ROWs must be managed in order to prevent operational hazards, protect facilities from fire, prevent safety problems for HHWP employees and neighboring members of the public, meet state and federal regulatory requirements and prevent interference with our ability to carry out both routine and emergency maintenance of these facilities.

Vegetation near the transmission systems is always a concern. Unplanned, widespread power outages can be caused by inadequate vegetation management.

To manage the vegetation on the ROW and protect our maintenance crews, the public, and our electric transmission lines and facilities, HHWP has developed our Transmission Vegetation Management Program (TVMP).

HHWP will clear the ROW to achieve a "Wire Border Zone." We will remove tall trees and plants in favor of low growing trees and plants for a more environmentally sound and stable ROW.



## Tree Trimming and Removal, Rights, Liabilities, and Laws

In California, there are rules and regulations to ensure public safety and electric reliability. Regulations covering vegetation management include:

**California Public Resources Code, Public Resource Code, Section 4292, Power Line Hazard Reduction:** HHWP is required to maintain minimum clearances and firebreaks around our transmission towers and distribution poles.

**Public Resource Code, Section 4293, Line Clearance Guidelines:** The HHWP is required to maintain minimum clearances between vegetation and their power lines. In addition, we must remove dead, rotten or diseased trees that may come in contact with their power lines.

**California Public Utilities Commission, General Order 95, Rule 35, Tree Pruning:** Though HHWP is not regulated by the California Public Utilities Commission, SFPUC does maintain minimum clearances between vegetation and their power lines to ensure public safety and system reliability per General Order 95, Rule 35. In addition, HHWP removes dead, rotten or diseased trees that may come in contact with their power lines.

**North American Electric Reliability Corporation Reliability Standard, FAC-003-1, Transmission Vegetation Management Program:** This reliability standard requires HHWP to develop and implement a vegetation management program for transmission lines over 200,000 volts.

## Methods of Management

HHWP manages the ROW through a scheduled maintenance cycle and call-in reports from the public. Our TVMP addresses both the control of unwanted vegetation and the control of noxious weeds. We promote the use of several methods of management to control unwanted vegetation including manual (use of physical labor/hand saws and chippers), chemical (use of herbicides) and mechanical (heavy equipment used for mastication).

We continually complete vegetation management projects in small sections throughout our ROW. You will be contacted by us when work is being scheduled in your area.

## Questions or Concerns

Please contact Hetch Hetchy Water and Power ROW Maintenance Manager, 209-989-2027

## Public Resource Code, Section 4292: Power Line Hazard Reduction

Except as otherwise provided in Section 4296, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or forest-covered land, brush-covered land, or grass-

covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower. This section does not, however, apply to any line which is used exclusively as telephone, telegraph, telephone or telegraph messenger call, fire or alarm line, or other line which is classed as a communication circuit by the California Public Utilities Commission. The director or the agency which has primary fire protection responsibility for the protection of such areas may permit exceptions from the requirements of this section which are based upon the specific circumstances involved.

## Section 1254 - Minimum Clearance Provisions

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

- At ground level - remove flammable materials, including but not limited to, ground litter, duff and dead or desiccated vegetation that will propagate fire, and;
- From 0 - 2.4 m (0-8 feet) above ground level remove flammable trash, debris or other materials, grass, herbaceous and brush vegetation. All limbs and foliage of living trees shall be removed up to a height of 2.4 m (8 feet).
- From 2.4 m (8 feet) to horizontal plane of highest point of conductor attachment remove dead, diseased or dying limbs and foliage from living sound trees and any dead, diseased or dying trees in their entirety.

## Public Resource Code, Section 4293: Line Clearance Guidelines

Except as otherwise provided in Sections 4294 to 4296, inclusive, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such areas, maintain a clearance of the respective distances which are specified in this section in all

Remember, work safely and before you dig, call USA at 811 or 800-227-2600.

directions between all vegetation and all conductors which are carrying electric current:

- For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet.
- For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet.
- For any line which is operating at 110,000 or more volts, 10 feet.

In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or pruned so as to remove such hazard. The director or the agency which has primary responsibility for the fire protection of such areas may permit exceptions from the requirements of this section which are based upon the specific circumstances involved.

## California Public Utilities Commission

### **General Order 95, Rule 35: Tree Pruning**

Where overhead wires pass through trees, safety and reliability of service demand that tree pruning be done in order that the wires may clear branches and foliage by a reasonable distance. The minimum clearances established in Table 1, Case 13, measured between line conductors and vegetation, under normal conditions, shall be maintained.

When a utility has actual knowledge, obtained either through normal operating practices or notification to the utility, dead, rotten and diseased trees or portions thereof, that overhang or lean toward and may fall into a span, should be removed.

Communication and electric supply circuits, energized at 750 volts or less, including their service drops, should be kept clear of limbs and foliage, in new construction and when circuits are reconstructed or repaired, whenever practicable. When a utility has actual knowledge, obtained either through normal operating practices or notification to the utility, that any circuit energized at 750 volts or less shows strain or evidences abrasion from tree contact, the condition shall be corrected by slacking or rearranging the line, pruning the tree or placing mechanical protection for the conductor(s).

### **EXCEPTIONS:**

Rule 35 requirements do not apply to conductors, or aerial cable that complies with Rule 57.4-C, energized at less than 60,000 volts, where pruning or removal is not practicable and the conductor is separated from the tree with suitable materials or devices to avoid conductor damage by abrasion and grounding of the circuit through the tree. Rule 35 requirements do not apply where the utility has made a

“good faith” effort to obtain permission to prune or remove vegetation but permission was refused or unobtainable. A “good faith” effort shall consist of current documentation at a minimum of an attempted personal contact and a written communication, including documentation of mailing or delivery. However, this does not preclude other action or actions from demonstrating “good faith”. If permission to prune or remove vegetation is unobtainable and requirements of exception 2 are met, the utility is not compelled to comply with the requirements of exception 1. The Commission recognizes that unusual circumstances beyond the control of the utility may result in nonconformance with the rules. In such cases, the utility may be directed by the Commission to take prompt remedial action to come into conformance, whether or not the nonconformance gives rise to penalties or is alleged to fall within permitted exceptions or phase-in requirements.

**Note: Revised November 6, 1992, by Resolution No. SU-15, September 20, 1996, by Decision No. 96-09-097 and January 29, 1997, by Decision No. 97-01-044.**

Mature trees whose trunks and major limbs are located more than six inches, but less than 18 inches, from primary distribution conductors are exempt from the 19-inch minimum clearance requirement under this rule. The trunks and limbs to which this exemption applies shall only be those of sufficient strength and rigidity to prevent the trunk or limb from encroaching upon the six-inch minimum clearance under reasonable foreseeable local wind and weather conditions. The utility shall bear the risk of determining whether this exemption applies, and the Commission shall have the final authority to determine whether the exemption applies in any specific instance, and to order that corrective action be taken in accordance with this rule, if it determines that the exemption does not apply.



*HHWP crews trimming trees on the ROW.*

### **Questions or Concerns**

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**Hetch Hetchy  
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