

Environmental Impacts, Legal
Flaws, and Infrastructure
Defects of Pacific Gas and
Electric's "Community Wildfire
Safety Program"

Presentation to the CNRCC

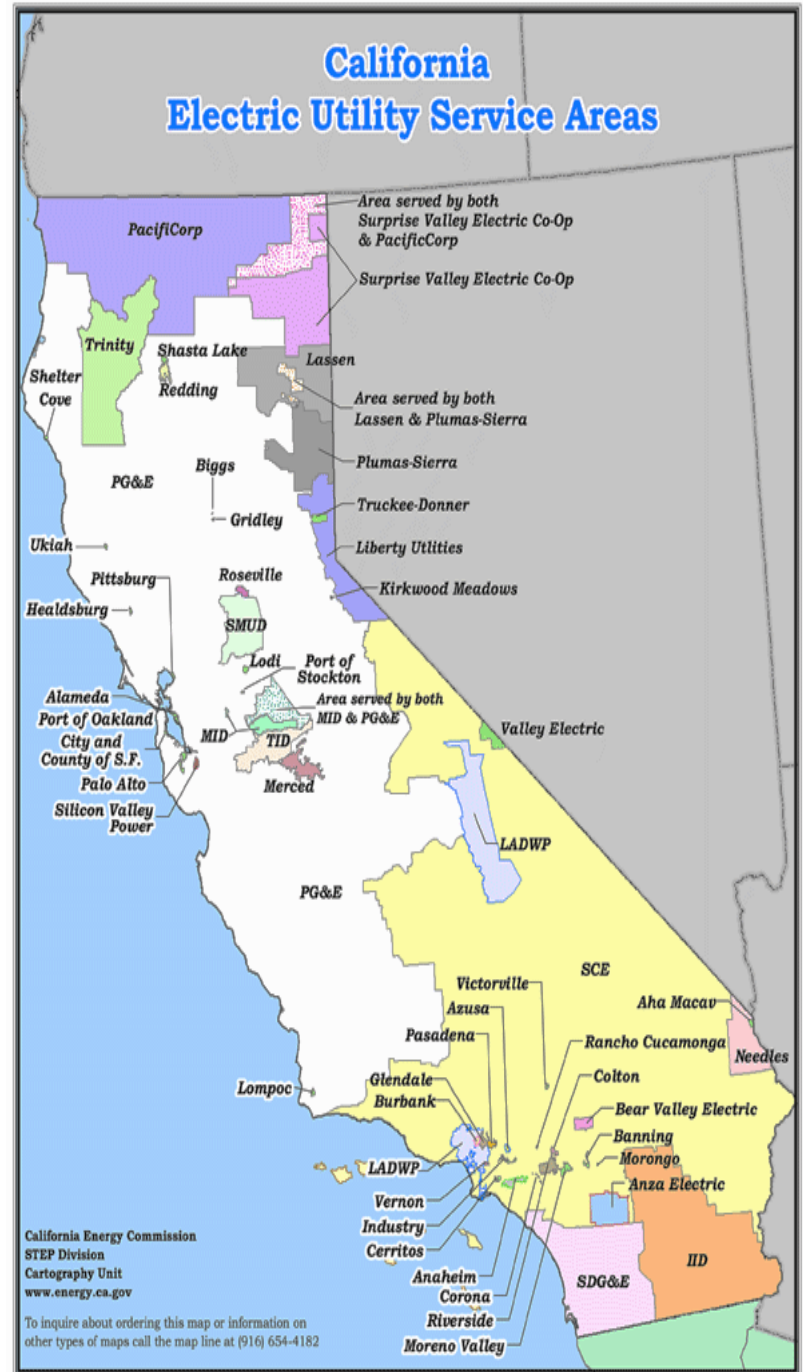
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CPUC / CalFire timeline & Electric Utility Wildfire Policy Events

- **October 2007 San Diego County and Malibu Canyon wildfires.**
- **October 2017 “wine county” fires.**
- **December 2017, CPUC Fire-Threat Map adopted and Regs adopted.**
- **High Fire-Threat Map land coverage, all of California. Tiers 2 and 3 combined, 70,305 sq. miles.**
- **Northern California 57,884 sq. miles.**
- **PG&E states 7,100 miles of distribution voltage wire corridor slated for 30 ft. wide, dirt to sky, vegetation clearance.**



PG&E Announcement

“Community Wildfire Safety Program”

Frequently asked questions

Why is PG&E doing this work?

Years of drought, extreme heat, and 129 million dead trees have created a new normal for our state. This new normal has increased the threat of wildfires across our service area, as we saw with 2017's statewide wildfires. So we must do even more in partnership with our customers and communities to reduce wildfire risks and protect public safety.

Is PG&E required to do this work?

The Fire Safety Zone work is a program that PG&E is undertaking voluntarily in partnership with our customers and communities to create an additional layer of protection and help increase wildfire safety. The CPUC requires PG&E maintain at least a 4-ft clearance between vegetation and power lines in high fire-threat areas year-round to help ensure electric reliability and public safety. We want to be sure we are doing all we can to reduce wildfire risks, ensure access for first responders, and keep our customers safe.

What is a high fire-threat area?

The California Public Utilities Commission (CPUC) worked in coordination with CAL FIRE and other experts to develop a High Fire-Threat District Map, adopting it in January 2018. The map identifies areas across California that have the highest likelihood of a wildfire impacting people and property, and where additional action may be necessary to reduce wildfire risks. To see the map, please visit the Commission's website: cpuc.ca.gov/FireThreatMaps.

Will PG&E be cutting down trees as part of this vegetation work?

We understand how important trees are to our communities. Trees are important to us, too. Unfortunately, trees that fall or grow into power lines can cause outages and be a serious hazard to people. This work will include some tree removals to help reduce wildfire threats and to keep our communities safe.

What will PG&E do with the vegetative and wood debris resulting from this work?

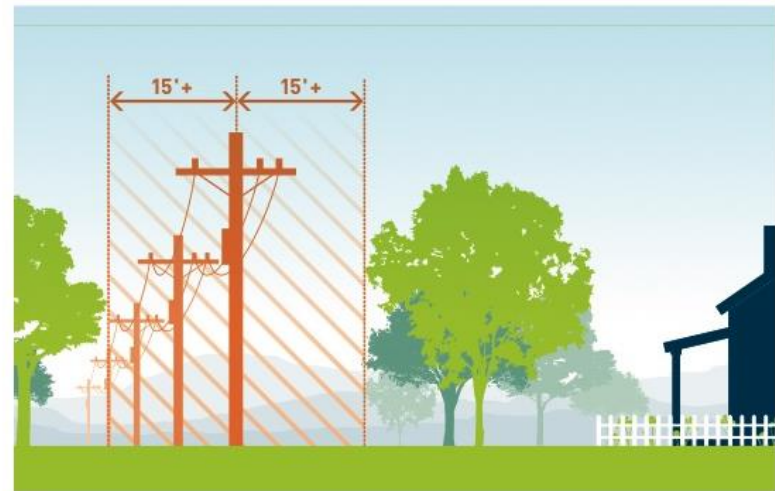
We will work with property owners to develop a plan specific to their property and needs that safely repurposes, relocates, or removes debris resulting from our Fire Safety Zone work.



COMMUNITY WILDFIRE SAFETY PROGRAM

Working together to establish Fire Safety Zones around power lines

This graphic has a green background. At the top, it says "COMMUNITY WILDFIRE SAFETY PROGRAM" in white, bold, uppercase letters. Below that, in a larger white font, it says "Working together to establish Fire Safety Zones around power lines".



Visit us at pgecommitment.com to learn more about PG&E's Community Wildfire Safety Program.



Together, Building
a Better California

April 2019

Old Junk Distribution Gear

This photo shows very old overhead wiring. Conductors are bare, small diameter. There are corroded clamps and ceramic insulators suspended on weak struts from a rotting pole.



Simplified enumeration of CA Public Utilities Commission General Order 95 code.

General Order 95, Table 1, Case 14 elevated and extreme fire danger Tier 2 and 3 classifications require maintenance of 4 feet of radial clearance around a 12Kv and 22.5Kv wire. There is an exception to cutting to maintain 4 feet. That exception allows a minimum of 6 inches clearance in the case of large trunks and strong branches that do not move in wind. These regulations apply to uninsulated (“uncovered”) bare wire conductors. These are by far the most common wire used by PG&E, solid small diameter (6 or 8 gauge) copper or larger gauge twisted aluminum. Insulated (covered) wire is uncommon. PG&E calls this “tree wire” and claims they are going to install it....in the next 10 years.

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CA Public Utilities Commission
General Order 95 code

In the December 2017 Proceeding on GO 95, the CPUC made a modification to Rule 35. This added a “Guideline” to these clearance rules stating that 12 feet of radial clearance was “recommended”.

A Guideline is not legally a Rule. The Commission chose not to change the Rule.

PG&E is using this Guideline to pressure landowners to allow 12 feet radial and greater clearance distances, and dirt to sky removal of all shrubs and trees in 30 ft. wide swath.

Threats of assuming PG&E fire liability are expressed or implied to pressure homeowners into cooperating with this damage to their property and land.

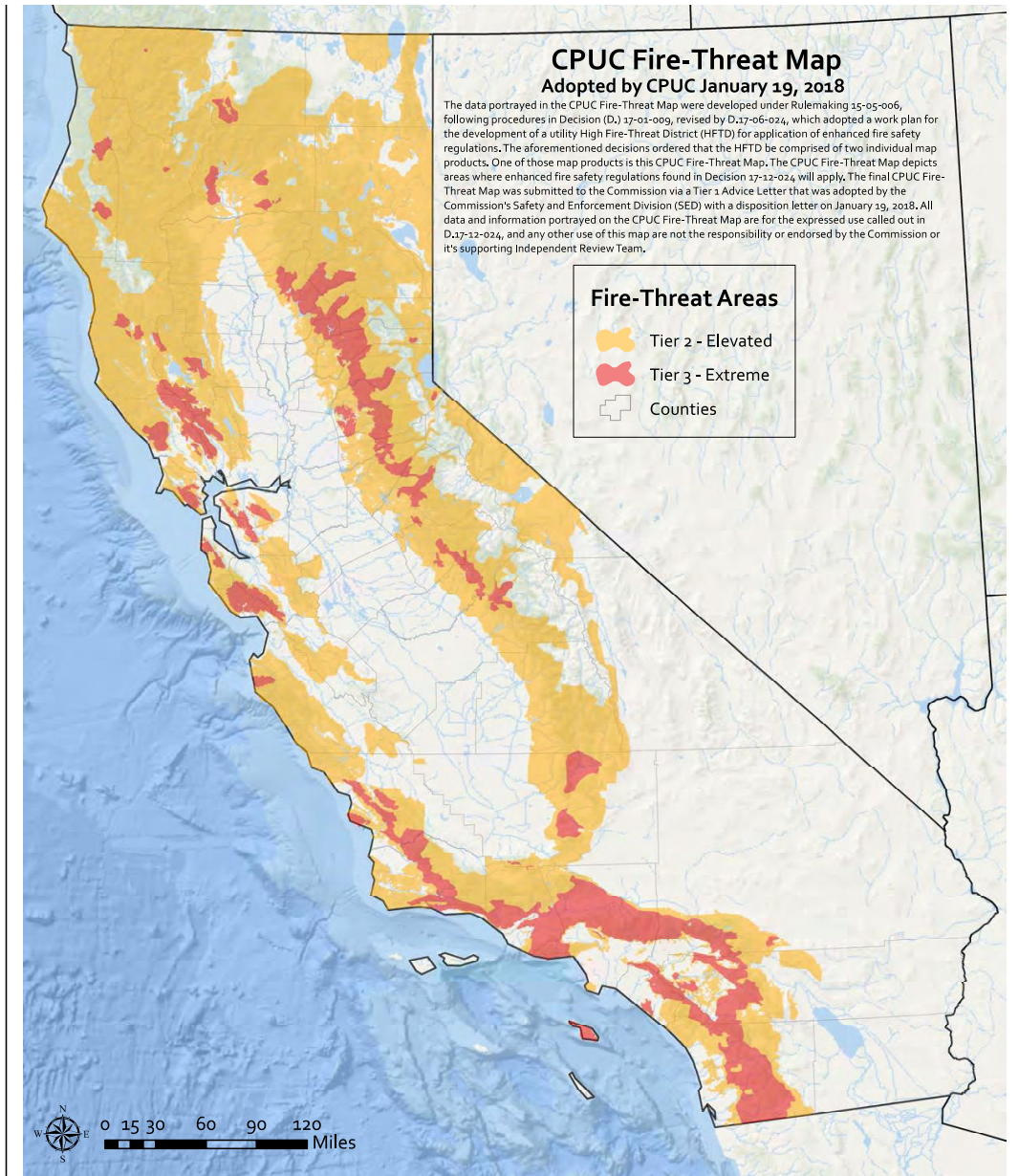
CPUC Fire –Threat Map adopted Dec 2017, formally on Jan 19, 2018

Elevated Wild Fire Risk-
Tier 2 - **Yellow**

Extreme Risk –Tier 3 –
Red

Both categories have the
same clearances in the
code.

**“Risk” is defined as the
risk of Utility ignited
wildfires, and is not
specified in regard to
Weather, Humidity etc.**



**PG&E hacked
Redwoods near
ephemeral stream.
Bear Creek Sub-
Watershed, San
Lorenzo River, Santa
Cruz Mountains.**



**Clear-cut Distribution
Wire Corridor, shrubs
removed in foreground.
PG&E has indicated
their general intent to
return to these sites
and use herbicide
though this has not yet
been documented in
Santa Cruz County.**



**Arnold CA, at 4000 ft.
Old Growth Ponderosa
Marked for felling.
Tree is 30 feet from
the power line.**

.....



2 Destroyed Live Ponderosas Sierras



Santa Cruz County old growth removal

This rare coast range old growth Ponderosa was destroyed before the current increased cutting began in 2018



Destroyed Sequoia near home in Arnold CA



Roadside Riparian Area Mark for Tree Removal

Residents are generally uninformed of the limits of PG&E's right to use or to damage right of ways.

County ordinances, CA Fish and Wildlife and Water Quality codes are being ignored.

Only CDF is requiring PG&E to have a permit. This is related to the sale or distribution of the wood, once cut.



PG&E log deck in Scotts Valley, Santa Cruz County CA.

Logs and wood chips are dropped here to be trucked out. This 5 to 6 acre site was occupied by PG&E overnight with no advance notification to the county or to the fire dept. 4 ft. diameter logs are shown in this photo.





CPUC LEAD AGENCY CEQA DETERMINATION

In the Dec. 2017 Record of Proceeding for the Fire Map, the Commission added changes to regulations for overhead power lines.

PG&E was provided a “guideline” for a 3 fold increase in vegetation clearances. The Rules themselves did not change. PG&E expanded this Guideline into their “Community Wildfire Protection Plan” with a dirt to sky removal of all vegetation at 30 ft. widths for over 7,100 miles of wire corridor. No equipment upgrades are part of this “Plan”. In Santa Cruz County 700 miles of wire pathway may be cut.

The Commission “Declared” this “Program” was “Not a Project” under CEQA. Stating the clearing was general maintenance.

There was no Notification List for this Determination. These violations of law open this case to a Writ of Mandate challenge.

Reasons Why Utility Power Wires Ignite Wildfires

The most common problem is called a high impedance arc fault. When energized wire falls to earth it arc flashes at extreme temperature. The earth is a poor conductor. So the resulting “short circuit” has insufficient amperage to burn out any PG&E fuse or trip a Reclosure device.

PG&E has no protective device anywhere on its system to deal with High Impedance Arc Faults. Downed wires arc continuously, for days, until a lineman arrives to pull a switch after a 911 call. This involves driving around searching for the fault.

The wire is often old, weak strength and highly prone to breaking, even from minor impacts with wind blown debris or fallen branches. Also the wire is uninsulated and will arc along its entire length anywhere it makes contact with earth or is bridged to another wire by an animal or debris. Mylar party balloons can bridge wires and create arcing, and fires.

The Solution

Stronger “covered” insulated wire, high impedance arc fault interruption and utility wire undergrounding.

Several international electrical engineering companies build high impedance arc fault detector systems. They are used both for feeder wire utility use and in utility sub-stations, and also in factories, and in large public buildings such as airports.

Schweitzer Engineering sells a robust power pole mounted feeder circuit, arc fault detector for \$3,500. Property calibrated and installed, arc fault interrupters have detection success rates of 95%. San Diego Gas and Electric has begun installing this type of gear.

This solutions are “on the shelf”. The R&D has been done. This equipment simply needs to be installed.

SEL SEL-751 Feeder Protection Relay

Directional Overcurrent, Arc-Flash Detection, and High-Impedance Fault Detection



Five-Inch, Color Touchscreen Display Model With Four Pushbuttons



Five-Inch, Color Touchscreen Display Model With Eight Pushbuttons



Two-Line Display Model With Four Pushbuttons



Two-Line Display Model With Eight Pushbuttons

New Features

- ▶ A new front-panel layout option with a 5-inch, color, 800 x 480 pixels touchscreen interface to navigate the screens, folders, and applications. The new touchscreen display layout allows bay control. You can also view metered quantities and perform HMI functions including viewing and editing settings, event summaries, target status, SER, etc. This option is available with four or eight pushbuttons, with or without a fiber-optic serial port, or with or without ac voltage inputs.
- ▶ Added an ac currents only model (no voltages) that can be configured with four pushbuttons, four ac current inputs, and without a fiber-optic serial port.
- ▶ Increased the maximum number of GOOSE subscriptions to 64.