

Community Wildfire Safety Program

South Fork American River Cohesive Strategy

December 11, 2019



Community Wildfire Safety Program



REAL-TIME MONITORING AND INTELLIGENCE

- Coordinating prevention and response efforts by monitoring wildfire risks in real time from our **Wildfire Safety Operations Center**
- **Expanding our network of PG&E weather stations** to enhance weather forecasting and modeling
- Supporting the **installation of new high-definition cameras** in high fire-threat areas



NEW AND ENHANCED SAFETY MEASURES

- Further enhancing vegetation management efforts to **increase focus on vegetation that poses a higher potential for wildfire risk**
- **Conducting accelerated safety inspections** of electric infrastructure in high fire-threat areas
- **Disabling automatic reclosing of circuit breakers and reclosers** in high fire-risk areas during wildfire season
- **Proactively turning off electric power for safety (Public Safety Power Shutoff)** when gusty winds and dry conditions combine with a heightened fire risk



SYSTEM HARDENING AND RESILIENCY

- Installing **stronger and more resilient poles** and **covered power lines**, along with **targeted undergrounding**
- **Upgrading and replacing electric equipment and infrastructure** to further reduce wildfire risks
- **Working with communities to develop new resilience zones** to provide electricity to central community resources during a Public Safety Power Shutoff event

Real-Time Monitoring and Intelligence

MONITORING wildfire risks in real time from our
24/7 Wildfire Safety
 Operations Center
 and coordinating **prevention and response efforts**



INSTALLING
~1,300 new weather
 stations by **2022**

Data available at mesowest.utah.edu

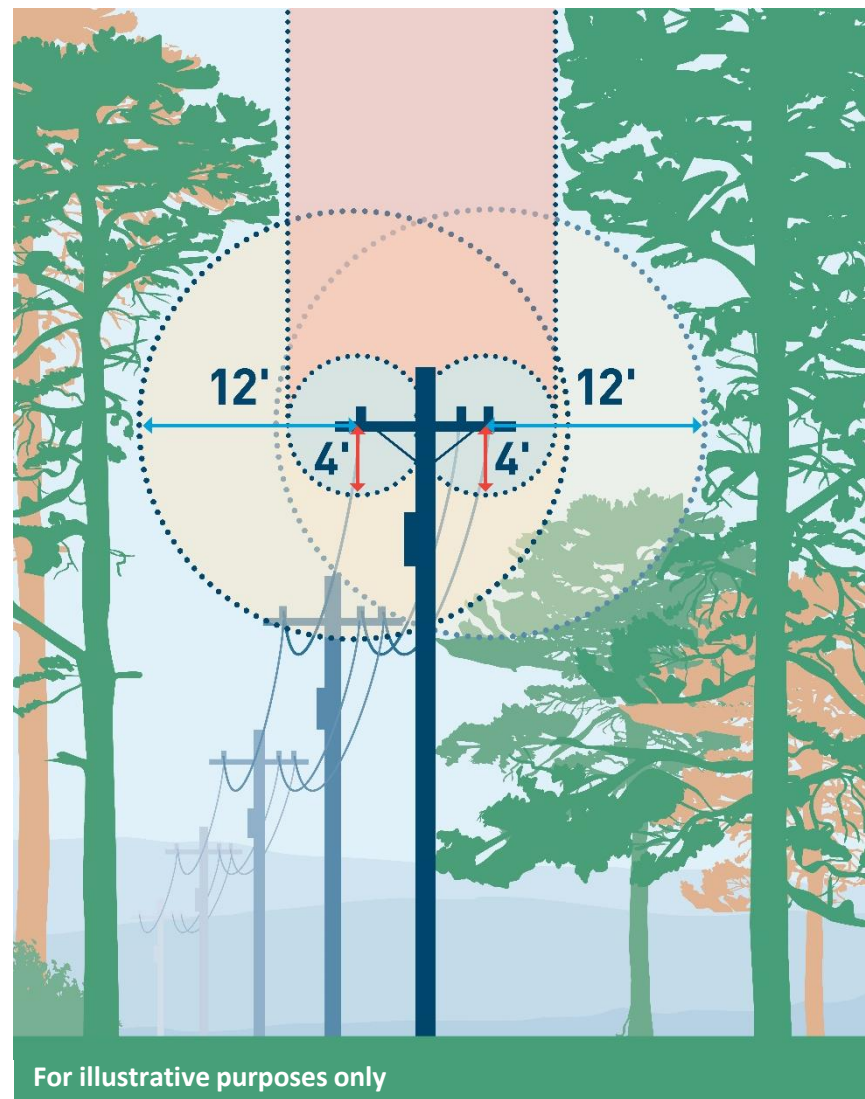


SUPPORTING the installation of
~600 high-definition
 cameras by **2022**
 Images available at alertwildfire.org

Enhanced Vegetation Management

We are **expanding and enhancing our Vegetation Management program** to further reduce wildfire risk.

- Our enhanced vegetation management work includes the following:
 - ✓ **Meeting state standards** for minimum clearances around the power line
 - ✓ **Addressing overhanging limbs and branches** four feet out from the lines and up to the sky
 - ✓ **Removing hazardous vegetation such as dead or dying trees** that pose a potential risk to the lines
 - ✓ **Evaluating the condition of trees that may need to be addressed** if they are tall enough to strike the lines
- We are working to complete this important safety work **in high fire-threat areas** over the next several years.



Wildfire Safety Inspections

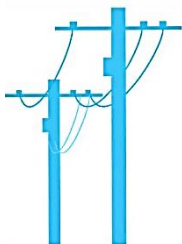


We are conducting accelerated safety inspections of electric infrastructure in areas of higher wildfire risk (Tier 2 and Tier 3).

As of October 31, 2019, through the Wildfire Safety Inspection Program (WSIP) inspections, we have completed:

- Inspections of **100%** of nearly 700,000 **distribution poles** in, or adjacent to, high fire-threat areas.
- Inspections of **100%** of nearly 50,000 **transmission structures** in, or adjacent to, high-fire threat areas.
- Inspections of **100%** of 222 **substations** in high fire-threat areas.

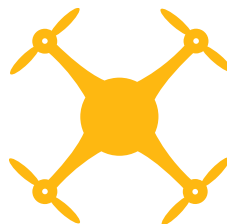
Inspections Overview



Accelerated inspections of transmission and distribution poles and towers as well as substations in high fire-threat areas



Visual inspections (ground and/or climbing) performed by crews of up to four people



Aerial inspections by drones to complement and further enhance inspections



Helicopters for inspections and to deliver crews to remote locations

We are taking action right away to address any immediate risk to public safety found during the accelerated inspections.

Electric System Maintenance and Repairs

We will **evaluate inspection results to determine repair needs and associated timing**. If any issues are found during the accelerated inspections that pose an immediate risk to public safety, **we are taking action right away to address the issue**.



- When inspections determine that repairs are needed, but **there is not an immediate safety risk, we will follow our preventative maintenance procedures, consistent with state guidelines** for high fire-threat areas.
- **Repairs will depend on what we observe in the field but could range** from installing new signs or electrical components to replacing poles or towers.
- Where possible, **we will bundle work to minimize customer impact**, particularly if we need to de-energize the line to safely complete the repairs.



System Hardening and Resiliency

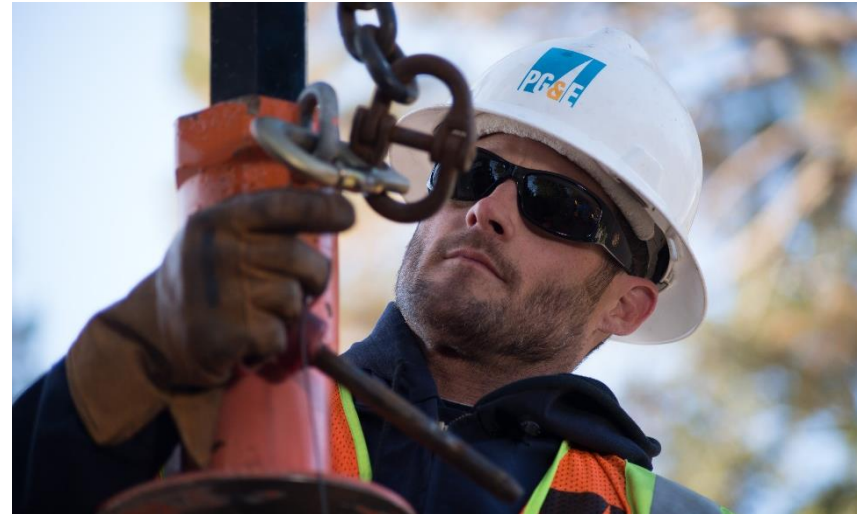
Installing stronger and more resilient poles and covered power lines across approximately 7,100 line miles of highest fire-risk areas

.....

Replacing equipment to further reduce risk to our system and tailoring upgrades based on terrain and weather conditions using more granular analysis of fire-prone regions

.....

Piloting new resilience zones to allow PG&E to provide electricity to central community resources serving local customers during a Public Safety Power Shutoff (PSPS) event



Additional Safety Measures

To further reduce the risk of wildfires, we are **disabling automatic reclosing of circuit breakers and reclosers** on lines in high fire-risk areas during wildfire season.

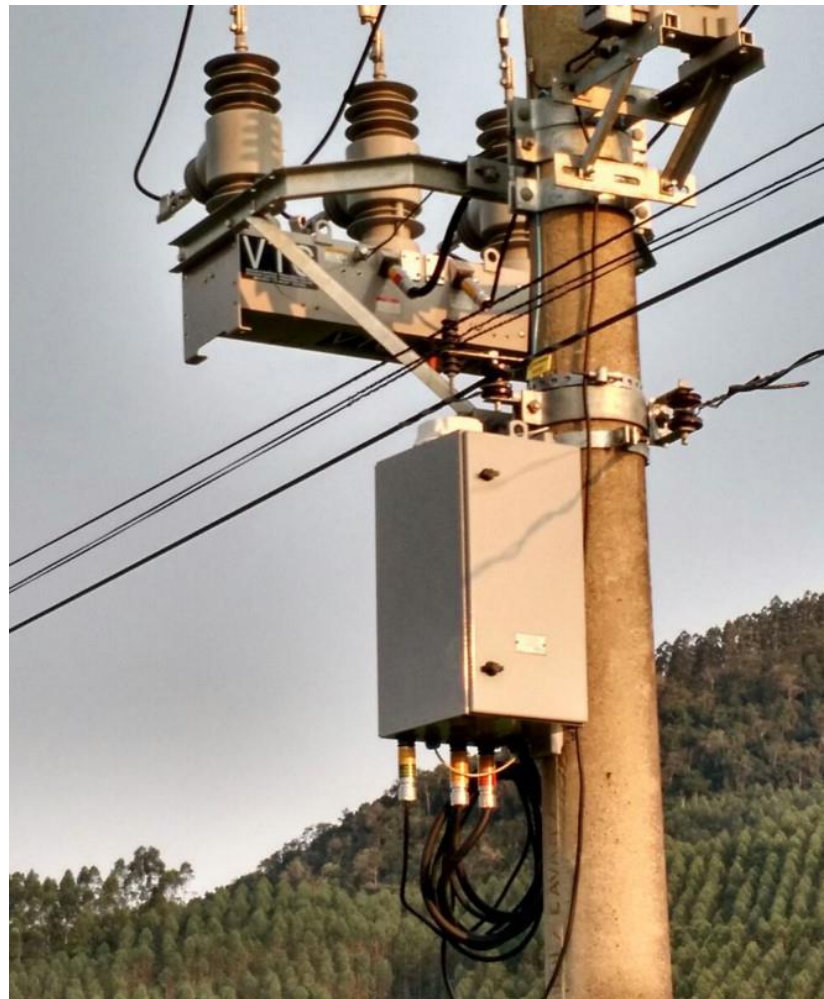
Where we have remote control capability, we **disable reclosing based on a daily decision-making process** during times of elevated risk.

ENABLED

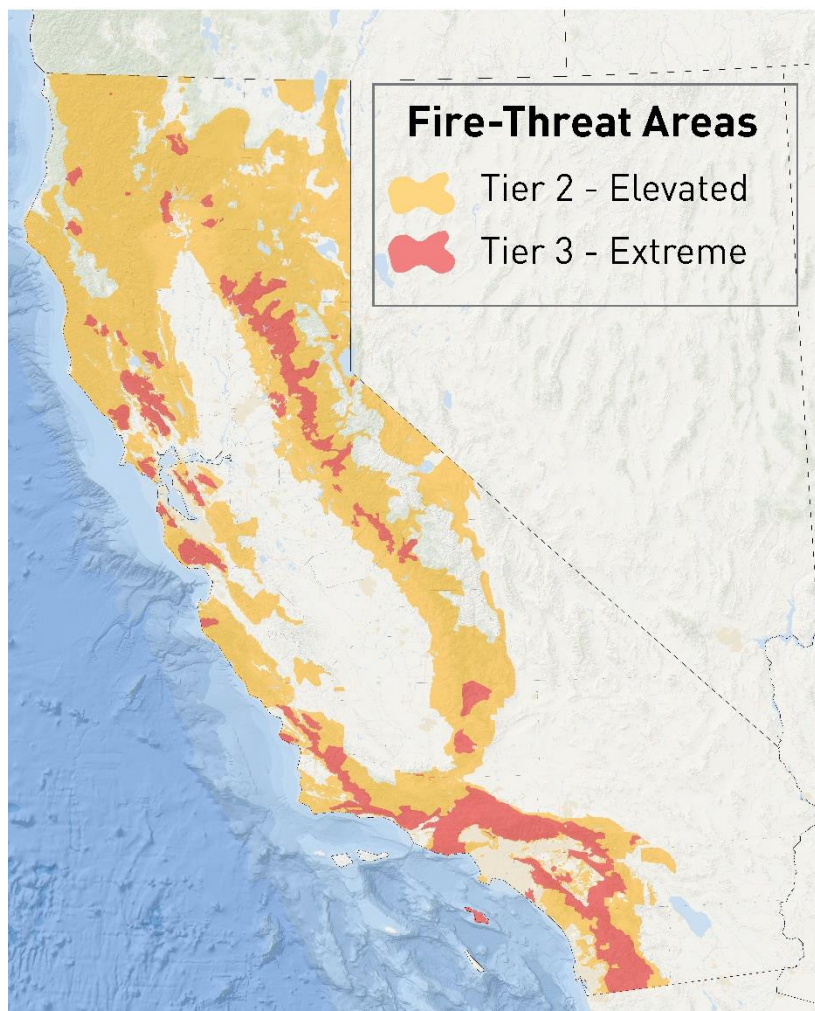
450 reclosing devices with remote capabilities in **2018**

WORKING to enable nearly

300 additional reclosing devices with remote capabilities



Public Safety Power Shutoff (PSPS)



Source: California Public Utilities Commission

- Beginning with the 2019 wildfire season, we expanded our Public Safety Power Shutoff program to include **all electric lines that pass through high fire-threat areas – both distribution and transmission.**
- The most likely electric lines to be considered for shutting off for safety are those that pass through **areas that have been designated by the CPUC as at elevated (Tier 2) or extreme (Tier 3) risk for wildfire.**
- Because the energy system **relies on power lines working together** to provide electricity, **any of PG&E's more than 5 million electric customers could have their power shut off.**

Public Safety Power Shutoff (PSPS)

We **monitor conditions** across our system and evaluate whether to proactively turn off electric lines for safety **when gusty winds and dry conditions combine with a heightened fire risk.**

While no single factor will drive a Public Safety Power Shutoff, some factors include:



A RED FLAG WARNING

declared by the National Weather Service



LOW HUMIDITY LEVELS

generally 20% and below



FORECASTED SUSTAINED WINDS GENERALLY ABOVE 25 MPH AND WIND GUSTS IN EXCESS OF APPROXIMATELY 45 MPH, depending on location and site-specific conditions such as temperature, terrain and local climate



CONDITION OF DRY FUEL

on the ground and live vegetation (moisture content)








ON-THE-GROUND, REAL-TIME OBSERVATIONS

from PG&E's Wildfire Safety Operations Center and field observations from PG&E crews

PSPS Event Notifications

Extreme weather threats can change quickly. **Our goal, dependent on weather, is to provide customers with advance notice prior to turning off power.** We will also provide updates until power is restored.

Timing of Notifications (when possible)

-  **~48 HOURS** before electricity is turned off
-  **~24 HOURS** before electricity is turned off
-  **JUST BEFORE** electricity is turned off
-  **DURING THE PUBLIC SAFETY OUTAGE**
-  **ONCE POWER HAS BEEN RESTORED**



City/County/Agency Notifications

We will **make every attempt to provide notice in advance of notifying customers** through:

- **Phone calls/emails** to primary contacts
- **Automated notifications** to send alerts through multiple channels
- **Provide customer alerts** to share via channels, such as city or county website, Nixle, Nextdoor and Reverse 911

Customer Notifications

We will attempt to reach customers through **calls, texts and emails**. We will also use **social media** and keep **local news** and **radio outlets** informed and updated.

Working to Restore Power

We will only restore power when we are certain it is safe to do so. We expect to be able to visually inspect for damage and restore power to most of our customers within 24 to 48 hours after weather has passed.



WEATHER ALL CLEAR

After the weather has passed and it's safe to do so, our crews begin **patrols and inspections**.



PATROL & INSPECT

Crews **visually inspect for potential weather-related damage to ensure the lines are safe to energize**. This is done by vehicle, foot and air, primarily during daylight hours.



ISOLATE & REPAIR DAMAGE

Where damage is found, **crews work to isolate the area** so other parts of the system can be restored. Crews work **safely and as quickly as possible** to make repairs.



RESTORE POWER

Once it is safe to energize, **a call is made to the PG&E Control Center** to complete the energization process. **Power is then restored to customers**.









NOTIFY CUSTOMERS

Customers are **notified that power has been restored**.

Because weather can last several hours or days, for planning purposes, we suggest customers prepare for outages that could last longer than 48 hours.



2019 PSPS Overview

	JUN 8-9	SEPT 23-26	OCT 5-6	OCT 9-12	OCT 23-25	OCT 26-NOV 1	NOV 20-21
 CUSTOMERS IMPACTED	~22,000	~50,000	~11,000	~732,000	~177,000	~941,000	~50,000
 COUNTIES IN SCOPE	5	7	3	35	17	38	11
 COMMUNITY RESOURCE CENTERS	4	8	3	33	28	77	29
 PEAK WIND GUSTS RECORDED	63 MPH	58 MPH	51 MPH	77 MPH	80 MPH	102 MPH	75 MPH
 SYSTEM DAMAGE/HAZARDS	5	4	2	116	26	328	15
 AVERAGE OUTAGE DURATION	16 HOURS	16 HOURS	14 HOURS	37 HOURS	25 HOURS	55 HOURS	25 HOURS

Note: All numbers are approximate. Data is current as of 12/2 but subject to change based on ongoing data reconciliation.

14

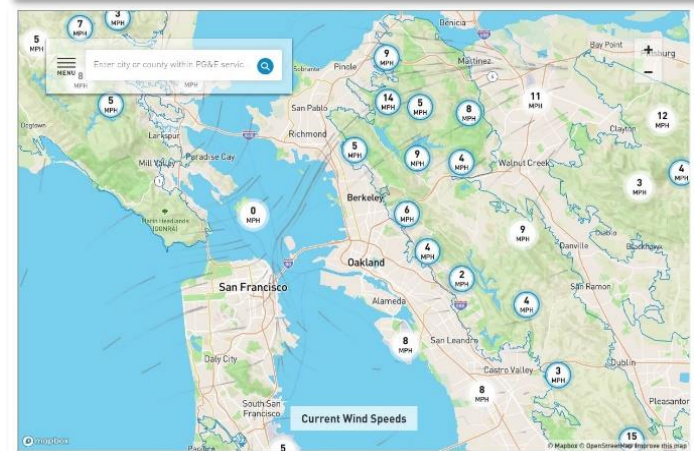
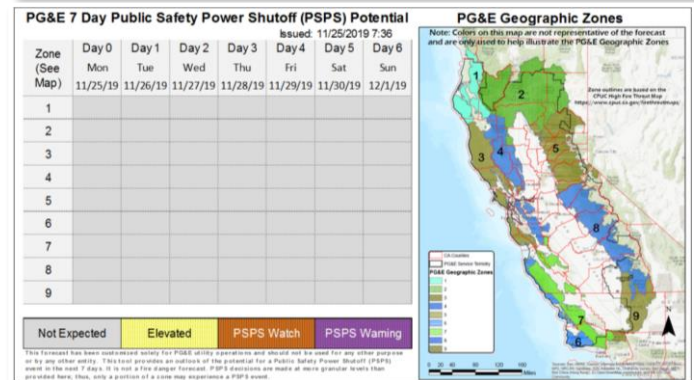
Following the wildfires in 2017 and 2018, some of the changes included in this presentation are contemplated as additional precautionary measures intended to further reduce future wildfire risk.

Weather and PSPS Forecasting Website

PG&E has launched a dedicated weather forecasting webpage at

pge.com/weather

- Weather data and daily forecasting information, including a 7-day PSPS potential lookahead
- Lookahead shows when and where PG&E is forecasting the type of conditions that may lead to a PSPS event
- See live weather information from the hundreds of weather stations PG&E has installed
- View images from the more than 100 high-definition cameras PG&E has deployed in high fire-threat districts



PSPS ZIP Code Alerts

PG&E has launched this tool to allow anyone to sign up to receive PSPS event notifications by ZIP Code

pge.com/pspszipcodealerts

- This means that anyone can sign up to be notified of potential public safety outages **impacting their workplace, a child's school or the home of a friend or loved one.**
- This tool is especially useful for **tenants, caretakers, travelers, parents of school-age children** and other non-account holders.
- **These alerts will be based on the ZIP Code provided** and will not provide address-specific notifications; maps of the impacted area(s) will be at **pge.com/pspsupdates.**
- All customers **who have a PG&E account** will be notified of PSPS impacts to the PG&E account location(s) using **the contact information on file** – visit **pge.com/mywildfirealerts** to ensure your info is up-to-date.



The Safety Action Center contains helpful information about wildfire risks and what customers can do before, during and after an emergency to keep their home, family or business safe.

VISIT:

safetyactioncenter.pge.com



Make sure we can reach you in an emergency.

Act Now



Is your whole family ready for an emergency?

Record Your Video



Have you mapped out escape routes from your home?

Share



Quiz: Do you know what to pack in your emergency kit?

Share



Create your emergency plan today!

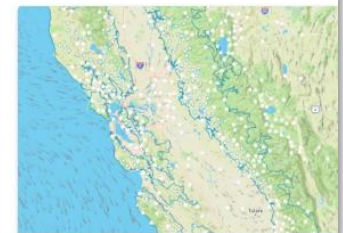
Share



Prepare an emergency kit with these six easy steps.



Don't forget your neighbors.



Visit PG&E's new Weather Awareness Center.

We welcome your feedback and input

For questions regarding PG&E's Community Wildfire Safety Program, please direct customers to:

- Call us at **1-866-743-6589**
- Email us at **wildfiresafety@pge.com**
- Visit **pge.com/wildfiresafety**

