Community Wildfire Safety Program

February 20, 2019
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.

### 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 as a last resort when extreme fire danger conditions are forecasted

#### 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
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.

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- This enhanced focus includes the following:
  - Meeting and exceeding state standards for minimum clearances around the power line
  - Addressing overhanging limbs and branches directly above and around the lines
  - Targeted removal of dead and dying trees as well as certain species that pose an increased potential risk of falling into power lines
- We are working to complete this important safety work in high fire-threat areas over the next several years
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**Wildfire Safety Inspections**

As part of our enhanced wildfire safety efforts, implemented following the recent wildfires as additional precautionary measures to further reduce wildfire risks, we are conducting accelerated safety inspections of electric infrastructure in areas at higher risk of wildfire (Tier 2 and Tier 3).

- **We are inspecting electric towers and poles** from top to bottom through visual and aerial inspections.
- This work is being done as part of our Community Wildfire Safety Program, and is in addition to our routine inspections and maintenance programs.
- **We have started with transmission lines** in high fire-threat areas, and plan to begin similar inspections of distribution lines and substations in high fire-threat areas in early 2019.
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**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) will be performed by crews of up to four people
- **Aerial inspections** by drones will complement and further enhance inspections
- **Helicopters** may also be used for inspections or to deliver crews to remote locations

*We will take action right away to address any immediate risk to public safety found during the accelerated inspections*
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 will take 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 CPUC guidelines for high fire-threat areas to determine repair timing.

• 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.
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**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 event.
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**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 in advance of the 2019 wildfire season
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We monitor conditions across our system and evaluate whether to proactively turn off electric lines, as a last resort, in the interest of safety.

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

<table>
<thead>
<tr>
<th><strong>A Red Flag Warning declared</strong> by the National Weather Service</th>
<th><strong>Low humidity levels</strong>, generally 20% and below</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forecasted sustained winds generally above 25 mph</strong> and <strong>wind gusts in excess of approximately 45 mph</strong>, depending on <strong>location and site-specific conditions</strong> such as temperature, terrain and local climate</td>
<td></td>
</tr>
<tr>
<td><strong>Condition of dry fuel</strong> on the ground and live vegetation (moisture content)</td>
<td></td>
</tr>
<tr>
<td><strong>On-the-ground, real-time observations</strong> from PG&amp;E’s Wildfire Safety Operations Center and field observations from PG&amp;E crews</td>
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- Beginning with the 2019 wildfire season, we are expanding 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 will be those that pass through areas that have been designated by the CPUC as at elevated (Tier 2) or extreme (Tier 3) risk for wildfire.

- Although a customer may not live or work in a high fire-threat area, their power may be shut off if their community relies upon a line that runs through an area experiencing extreme fire danger conditions.

Source: California Public Utilities Commission
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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

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.

City/County/Agency Notifications

If possible based on conditions, we will 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
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**Working to Restore Power**

<table>
<thead>
<tr>
<th>WEATHER</th>
<th>PATROL &amp; INSPECT</th>
<th>ISOLATE &amp; REPAIR DAMAGE</th>
<th>RESTORE POWER</th>
<th>NOTIFY CUSTOMERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL CLEAR</td>
<td>Crews visually inspect every mile of the lines to look for potential weather-related damage to the lines, poles and towers. This is done by vehicle, foot and air.</td>
<td>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.</td>
<td>Once it is safe to energize, a call is made to the PG&amp;E Control Center to complete the energization process. Power is then restored to customers.</td>
<td>Customers are notified that power has been restored.</td>
</tr>
</tbody>
</table>

**After the extreme weather has passed** and it’s safe to do so, our crews begin **patrols and inspections**.
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**Working With Our Customers to Prepare**

We are continuing to **reach out to our customers and communities** about wildfire safety and steps they can take to prepare.

- **Reaching out to customers** and asking them to update their contact information at [pge.com/mywildfirealerts](http://pge.com/mywildfirealerts)

- **Engaging with organizations for our customers who have specific needs** to explore ways we can partner

- **Partnering with community leaders, first responders, and public safety authorities** around PSPS preparedness and coordination

- **Holding answer centers and open houses** (as needed) in advance of and during wildfire season

- **Doing additional outreach to Medical Baseline and Medical Baseline-eligible customers** in high fire-threat areas

- **Continuing to share information** through [pge.com/wildfiresafety](http://pge.com/wildfiresafety)
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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