

ATTACHMENT D
PG&E 2015 Fire Prevention Plan



Fire Prevention Plan

August 27, 2015

A.1 Summary

Pacific Gas and Electric Company (PG&E) has had in place a number of separate operational plans and programs to prevent and mitigate the risk of fire ignitions associated with the operation of PG&E's electric facilities in areas having a "Extreme" and "Very High" fire rating, according to the USFS Wildland Fire Assessment System (WFAS). To complement and support the various operational measures PG&E has in place, PG&E monitors information made available from numerous entities and disseminates predicted weather and fire threat information to employees and contractors within its service territory to keep them informed of critical meteorological conditions. PG&E also has programs to reach out to its customers and first responders throughout its service territory to educate them on electric safety.

This plan collects in a single document the multiple fire prevention and mitigation plans and programs utilized in PG&E's entire service territory. It also includes in Attachment 1 the additional California Public Utilities Commission (CPUC) requirements for "Extreme" and "Very High" Fire Threat Zones in Southern California, which includes Santa Barbara County, and in Attachment 2, the identification of the CIP Tier 3 and Tier 4 fire threat areas to be used as the interim fire threat map, as ordered in Phase 2, D 12-01-032.

A.2 Policy Statement

It is the Pacific Gas and Electric Company's policy to:

- Plan for natural and man-made emergencies such as fires, floods, storms, earthquakes, cyber disruptions, and terrorist incidents;
- Respond rapidly and effectively, consistent with the National Incident Management System principles, including the use of the Incident Command System (ICS), to protect the public and to restore essential utility service following such emergencies;
- Help to alleviate emergency-related hardships;
- Assist communities to return to normal activity.

A.3 Plan Components

D.3.1 Fire Prevention Pre-Planning

Education

- Each year prior to May 1st, field personnel and their supervisors receive training on Utility Standard S1464 "Fire Danger Precautions in Hazardous Fire Areas." (This standard outlines operational requirements for working and operating in areas that are considered high fire risk during fire season.)
- PG&E conducts annual electric safety training for first responders; including law enforcement agencies, fire departments, public works and transportation agencies.

- PG&E participates in annual joint exercises that include external partners from the first responder community and emergency management community to enhance preparedness and prevention efforts.



Training First Responders

- PG&E meets annually with local, state and federal agencies and jurisdictions to share fire prevention plans, and strategize for the coming year.

Intelligence Gathering – Weather and Fire

- PG&E's meteorology department utilizes state-of-the-art weather forecast model data and information from the National Weather Service (NWS), The United State Forest Service (USFS) Wildland Fire Assessment System (WFAS), and other agencies to evaluate the short to medium term fire weather risks across its service territory.
- In the short term (Day 1), fire danger data from the USFS WFAS is ingested in the PG&E GIS network and Fire Adjective Index System, which disseminates "very high" and "extreme" fire danger alerts. These alerts guide operational decisions to reduce the fire ignition risk (see Section 2 – Operational Readiness During High Risk Conditions). The meteorology team also evaluates Red Flag Warnings or Watches issued by the NWS and weather model data to assess the short-term fire weather risk across the territory. All fire weather/danger concerns and alerts are included in the daily operational forecast email to electric operations and are also reported on daily electric distribution and transmission operational status teleconference calls.
- In the medium term (days 2 – 7), the meteorology team identifies upcoming periods of heightened fire weather risk by evaluating weather model data for potentially impactful events such as offshore wind events, extreme hot and dry conditions, and dry lightning potential. This analysis is combined with weekly fire danger forecasts from National Interagency Fire Center (NIFC) - Predictive Services for Northern (ONCC) and Southern California (OSCC) to give advanced warning of upcoming potentially significant periods of fire danger.
- The PG&E meteorology department also runs its own weather forecasting model known as POMMS, the PG&E Operational Mesoscale Modeling System, which outputs granular forecasts of important fire weather parameters including wind speed, temperature, relative humidity, and precipitation. The model also produces key fire weather indicators such as the Fosberg Fire Weather Index and has also been linked to the National Fire Danger Rating System (NFDRS) to derive key fire

danger indicators, such as the Energy Release Component, Ignition Component, and Spread Component, etc. PG&E Meteorology is piloting the use of these POMMS-driven fire danger indicators to develop more granular and informative fire danger information than what is publically available.

D.3.2 Established Fire Prevention Program

PG&E has in place programs that serve to mitigate the risk of an ignition associated with its electrical operations through its service territory. The various programs are:

Electric Operations – Asset Management

Non-Exempt Equipment Replacement

This program applied in select areas designated by PG&E. Locations are selected based on equipment type and a standardized assessment of the surrounding terrain. These factors are considered with the equipment's feasibility of replacement. If existing equipment is in a configuration that is not eligible for replacement, fire risk is mitigated by annual maintenance of firebreaks and the base of the supporting pole or structure.

Infrared (IR) Program and Automatic Splice Inventory

This program is currently prioritized in PG&E designated wildland fire prevention areas with a multi-year strategy to IR and splice inventory the entire electric distribution system. This program utilizes forward looking infrared (FLIR) technology to identify thermal exceptions on all phases of line. Thermal exceptions are evaluated to prioritize repair and replacement of the facilities. Visual inspection facilitates the inventory and volume of automatic splices. Certain priorities are designated for wildland fire risk areas to minimize fault or failure during fire season.

Wires-Down Program

Our Distribution Planning department performs a site visit to most wire-down locations caused by either equipment failure or animal contact. The data obtained from these visits aids in our efforts to reduce future wires-down events. Some of the benefits include:

- Establishing failure rates for conductor types and size
- Obtaining splice data which is added to the MapGuide (GIS) system.
- Obtaining details on wire-down events where the conductor remained energized.
- Generating projects to replace deteriorated conductor

Wood Pole - Test and Treat Program

The Pole Test and Treat (PT&T) program performs intrusive testing on all wood distribution and transmission poles. While General Order (GO) 165 mandates this testing on 20-25 year increments depending on the time of installation, PG&E's program is based on a 10 year cycle. This PG&E program exceeds the inspection cycle requirements outlined in the GO, as well as incorporates wood preservation practices that move beyond the regulatory requirement. These factors allow PG&E to identify and mitigate the decay of wood which

reduces failures. The program also allows for proactive reinforcement or replacement of poles that do not meet remaining strength requirements.

Wood Pole Bridging Program

This consists of the bridging of crossarms to prevent pole fires which can occur at the through bolt location between the wood crossarm and the pole during light rain or mist. Because this area is dry and has a high resistance to insulator leakage currents flowing to ground, a hot spot exists on the pole. These hot spots can be eliminated by shunting this high resistance area with a short length of bare wire.

Electric Operations – Maintenance and Construction

Overhead Patrols and Inspections

PG&E has a patrol and inspection program for its overhead electric facilities that helps to identify damaged facilities and other conditions that may pose the risk of an ignition. The program is designed to:

- Perform annual patrols of distribution lines in urban areas, designated high fire threat zones, with biannual patrols of overhead distribution facilities in rural areas.
- Perform targeted patrols on transmission lines located within Tier 3 and Tier 4 designated high fire threat areas.
- Perform detailed inspections of overhead transmission and distribution facilities. Transmission facilities are on a 3-year cycle for 500 kV, a 5-year cycle for 230 kV and lower having steel structures, and a 2-year cycle for wood pole structures. Distribution facilities are on a 5-year cycle. In PG&E designated areas, corrective actions are prioritized based on a conditions capability to propagate wildland fire. If conditions warrant concern for wildland fire ignition, the corrective actions are scheduled and tracked to completion prior to peak fire season.
- Maintain auditable documentation of patrol and inspection activity and findings.

Operational Readiness During High Risk Conditions

Utility Standard S1464 "Fire Danger Precautions in Hazardous Fire Areas," outlines operational requirements for working and operating in areas that are considered high fire risk during the designated fire season. This standard is based on Fire Index Ratings that are determined by Cal Fire daily during the fire season. A Fire Index zone is a static geographical area that is given a unique Fire Index number. All potential fire hazard zones throughout the service territory are identified on the Fire Index Rating Map. When an area is rated "Extreme" or "Very High," it is identified and colored coded on the map. (Refer to Attachment 3.) The following summarizes the plan:

- General readiness requirements for all employees are covered, including awareness of all laws, rules, and regulations of fire agencies having jurisdiction over areas in which they work or travel. Each crew must be equipped with well-maintained firefighting equipment.

- Fire Index ratings, as determined on a daily basis during the fire season, are in effect from 0800 hours to 2 hours after sunset.
- Field personnel traveling or working in an "Extreme" or "Very High" Fire Index area as determined by the daily Cal Fire Index Map, are prohibited from any burning, welding, blasting, smoking, and driving off cleared roads.
- Electric Operations is restricted from testing any section of line that relays in a Fire Index area rated "Extreme" or "Very High", as determined by the daily Cal Fire Index Map, until the line has been patrolled and all trouble cleared.
- Suspend non-essential field meetings where off road driving is required into high fire risk areas (Tier 3 and Tier 4) on Red Flag designated days.
- Require fire suppression plan for construction activities on new transmission projects within Tier 3 and Tier 4 areas.

Notification Process to Personnel of Daily Fire Threat Conditions

- Daily updates of a fire index website that contains an image showing active "Extreme" and "Very High" areas.
- Daily 6 a.m. fire index e-mail.
- Daily review of the fire index by Crew Supervisors and briefing of crews if they are heading into an area having fire indexes of "Extreme" and "Very High" zones.
- Daily dissemination of all Red Flag Warnings on Distribution System Operations (DSO) Storm Outage Prediction Project forecast for "Extreme" and "Very High" areas and daily DSO status calls Mondays through Fridays, excluding holidays.
- Weekly fire danger forecast from meteorology team.
- Production of a daily image of the "Extreme" and "Very High" fire index areas, using internal Geographic Information Systems (GIS). This image is available on the PG&E intranet and can be viewed with intranet access.

Vegetation Management

Regulatory

PG&E manages the vegetation located in proximity to its overhead electric facilities, which reduces the risk of possible ignitions associated with vegetation contact. PG&E's program is designed to:

- Complies with all existing State and Federal regulatory vegetation clearance requirements.
- Perform annual patrols to ensure required vegetation clearances are maintained and hazard trees abated.
- Maintain tree-to-line clearances as well as radial clearances around its poles pursuant to Public Resources Code Section 4292 and 4293.
- Maintain auditable records of all work done in high fire risk areas.

Fire Risk Reduction

PG&E Vegetation Management operations are utilizing the 2010 CIP Fire Threat Maps to prioritize targeted pruning and removal of trees to minimize the impacts of extended drought on vegetation in proximity to its facilities. This work goes well beyond regulatory requirements and works with communities and large property owners to develop and execute projects manage vegetation for a multitude of benefits, including wildland fire prevention. This organization is also testing the capability LiDar technology to patrol portions of its distribution and transmission systems.

D.3.3 In-Development, Pilot and Ad-Hoc Fire Prevention Activities

PG&E is dedicated to exploring the value of additional fire prevention programs associated with its varied operations. The following list of activities has varied application within PG&E's service territory. All are being evaluated as part of the companies fire prevention plan to verify applicability, cost-benefit and fire prevention effectiveness on an on-going basis.

- Voluntary firebreak maintenance for non-exempt equipment in PG&E designated areas
- PT&T prioritization of pole reinforcement and replacement in high fire threat areas
- Annealed copper replacement
- Targeted conductor replacement
- Increased SCADA
- Line Recloser auto-blocking in high fire threat areas
- Equipment overhaul in high fire threat areas
- Sensitive ground fault tripping
- Non-Test setting in distribution and transmission during specific operations and conditions
- Increased squirrel / raptor protection
- T-line down guy / insulator retrofits
- Targeted pole loading evaluations
- Targeted defensible space and fuel reduction at PG&E facilities
- Insulator washing
- Small fire suppression training - Indian Backpacks/McCleod

D.3.4 Pro-Active Responses to Fire Incidents

PG&E's fire prevention activities include firefighting and fire-recovery response. In the event a fire threatens public safety or PG&E facilities, PG&E will support firefighting efforts as appropriate, through the procurement and allocation of man power, particularly those from unaffected areas and outside sources and activation of PG&E's Incident Command

System. PG&E has developed and has ready two 39' and four 24' Incident Command Centers that are self-contained, operationally ready, mobile coordination and communications centers, which can be deployed within hours.

With approval of the fire Incident Commander at the Incident Command Post, there are many cases where PG&E crews respond to the fire area and perform pole pre-treatment and fuel reduction activities ***ahead of the fire*** on and near the power line right-of-way.

- Pole pre-treatment is conducted with an approved wildland fire chemical applied to wooden power poles, thus helping to prevent ignition of the power pole from direct flame impingement or radiant heat.
- Vegetation clearing/fuel reduction – Vegetation Management crews may work ahead of the fire to reduce the fuel in and around the power poles and utility right-of-way using a variety of vegetation clearing/fuel reduction methods.
 - Limbs are removed to reduce ladder fuels, thus preventing a fire from getting into the tree crowns and reducing the volume of fuel/vegetation in the right-of-way.
 - Vegetation is treated with masticators to create defensible space around the power poles if the fire were to burn in the proximity, the right-of-way would act as a fuel break and bring the fire out of the crown and down to the ground, so that the fire suppression crews will have a better chance to control the spread of the fire.
- Field readiness – Field personnel may work directly with the fire suppression Incident Command to coordinate efforts to identify potential hazards and mitigations to provide a safe area for the public and the personnel working onsite. If the power lines need to be de-energized, the crews are onsite to perform the task for the fire control personnel. This will alleviate a hazard and the possibility of contact with a live/hot conductor should it come down from a burned power pole or be brought down by a hazardous tree or other conditions.
- Operational controls – Onsite personnel may coordinate with fire suppression Incident Command personnel should a change in tactics be necessary to protect critical generation, transmission and distribution system assets.

D.3.5 Post Incident Recovery

Critique Process

- PG&E normally conducts a thorough post-event critique within 21 days after a fire-related incident resulting in Operations Emergency Center (OEC) activation.
- PG&E also participates in joint public agency/PG&E debrief sessions following a fire event that required an escalated response, to gather information on response activities that went well, identify areas for improvement, and share best practices and lessons learned.
- Each department involved in an escalated-response event should review their emergency operations plans to determine whether modifications need to be made in light of the experience gained during the emergency.

- PG&E normally requests after action reports from responding agencies to review, and utilizes them in future improvement planning efforts.

Remediation Activities

- Abating fire affected trees that pose a threat to the utility lines is normally done after the fire has gone through the area.
- To control erosion, mastication is used with minimal soil disturbance and dense organic material left behind. In coordination with fire suppression agencies, PG&E may construct water bars in the power line right-of-way access roads for erosion reduction in the burned area. This is done after the restoration efforts are completed.
- In some cases conductors and insulators may need to be cleaned based on the possibility that fire retardant was dropped on the line and that the particulate matter from the smoke plume could have caused a buildup on the line due to incomplete combustion of the fire, particulate matter, and radiant heat.



Example of Masticated Area

A.4 Fire Prevention Plan References

1. CPUC General Order 166, Standard 1.E: Fire Prevention Plan.
2. CPUC Decision 09-08-029: Decision in Phase 1—Measure to Reduce Fire Hazards in California Before the 2009 Fall Fire Season, August 20, 2009. (Phase 1 of Rulemaking 08-11-005.)
3. CPUC Decision 12-01-032: Decision Adopting Regulations to Reduce Fire Hazards Associated with Overhead Power lines and Communication Facilities, January 12, 2012.(Phase 2 of Rulemaking 08-11-005.)
4. Electric Distribution and Transmission Utility Standard S-1464 "Fire Danger Precautions in Hazardous Fire Areas"
5. CPUC Decision 14-05-020: Decision Granting In Part and Denying In Part The Petition to Modify Decision 12-01-032, May 2014. (Refer to Attachment 3.)

A.5 Fire Prevention Plan Attachments

Attachment 1 – Special Fire Threat Zones: Santa Barbara County

Summary

The CPUC has directed utilities to take additional steps to mitigate fire risk in certain high fire threat areas in Southern California counties, including Santa Barbara County.¹

As a result PG&E's plan includes the following additional fire prevention and mitigation measures for its facilities in the applicable areas of Santa Barbara County.²

Vegetation Management

For line sections in a State Responsibility Area (SRA) or line sections located in "Extreme" and "Very High" Fire Threat Zones in a Local Responsibility Area (LRA), the following vegetation clearance requirements apply.

Clearances to be maintained year-round:

- 2.4 kV-72 kV = 6.5' at time of trimming, 4' at all times
- 72 kV-110 kV = 10' at time of trimming, 6' at all times
- 110kV-300 kV = 20' at time of trimming, 10' at all times
- Above 300 kV = 20' at time of trimming, 15' at all times

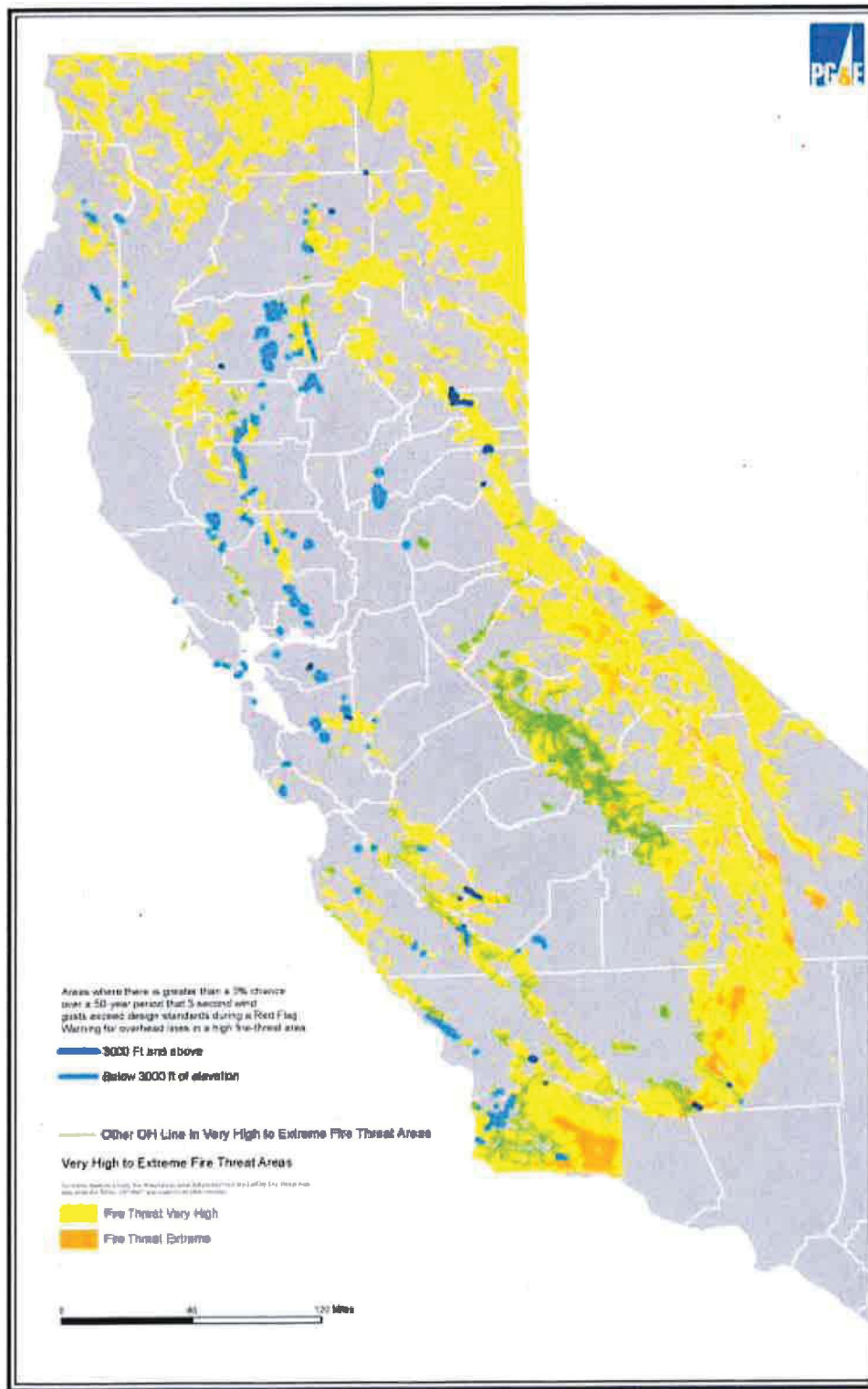
Overhead Patrols

For overhead distribution facilities located in rural areas in the "Extreme" and "Very High" Fire Threat Zones of Santa Barbara County, patrols of applicable facilities should be conducted annually instead of every two years.

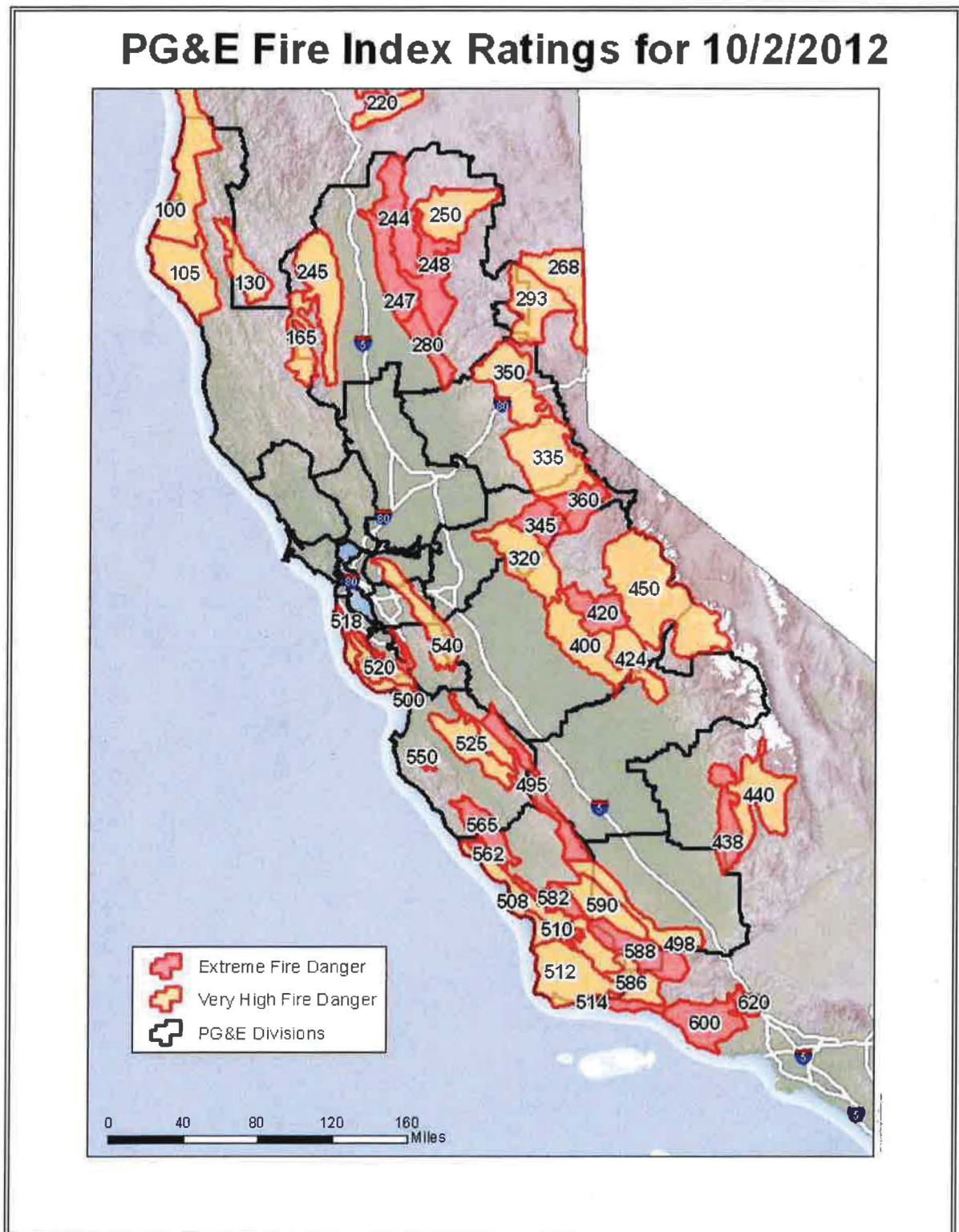
¹ See CPUC D.09-08-029 and D.12-01-032 and corresponding requirements in General Order (GO) 95 (including new Case 14 in Table 1 and Appendix E) and GO 165.

² The areas to receive special treatment by PG&E in Santa Barbara County are the "Extreme" and "Very High" Fire Threat Zones as designated on the Fire and Resource Assessment Program (FRAP) Map.

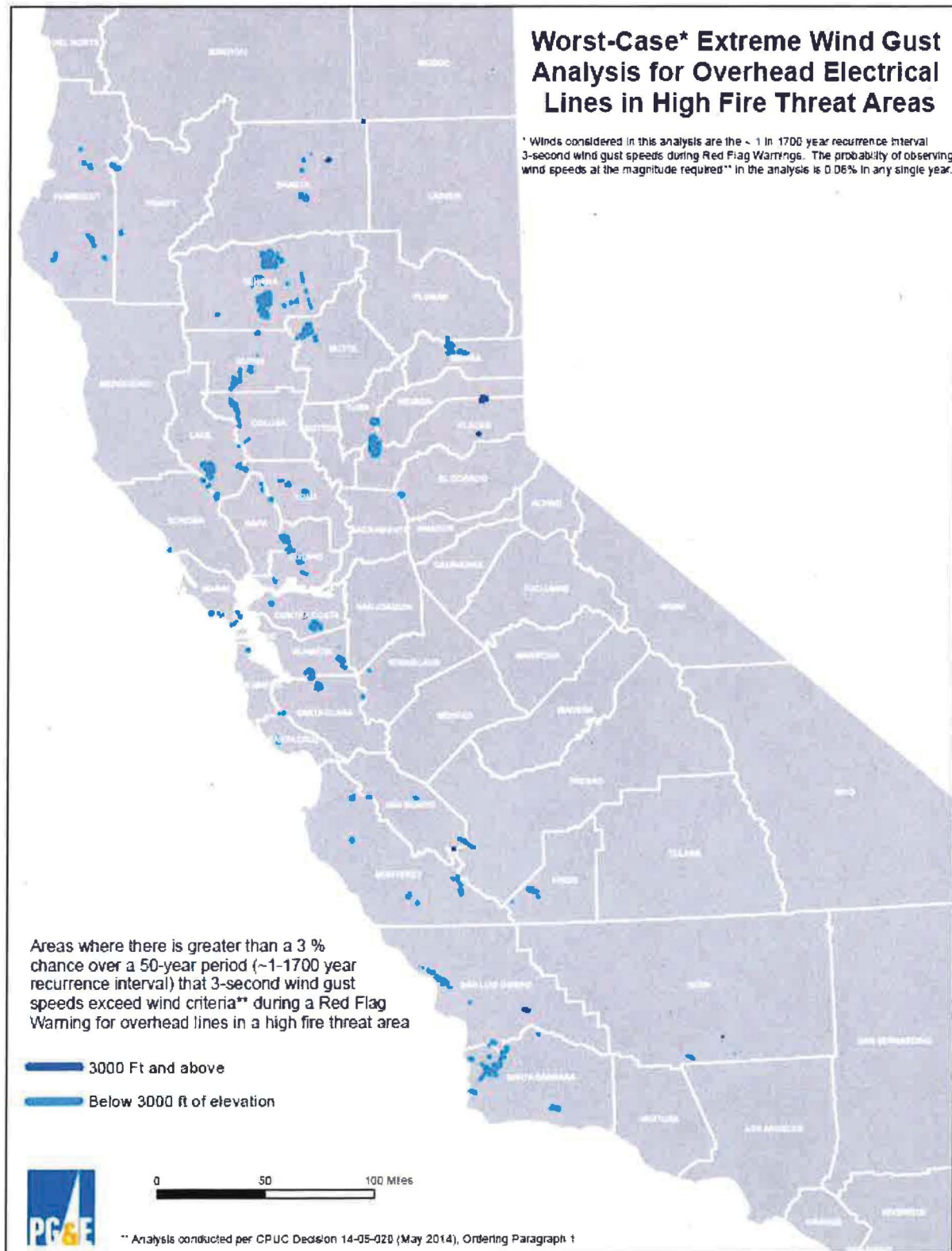
Attachment 2 – Interim Fire Threat Map



Attachment 3 - Fire Index Map of PG&E Territory



Attachment 4 – Worst Case Extreme Wind Gust Analysis



ATTACHMENT E

Counties' Comments on R.18-12-005

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Examine Electric
Utility De-Energization of Power Lines in Dangerous
Conditions.

Rulemaking 18-12-005
(Filed December 13, 2018)

**COMMENTS OF THE COUNTY OF MENDOCINO, THE
COUNTY OF NAPA, AND THE COUNTY OF SONOMA ON
R.18-12-005**

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Dated: February 8, 2019

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Examine Electric
Utility De-Energization of Power Lines in Dangerous
Conditions.

Rulemaking 18-12-005
(Filed December 13, 2018)

**COMMENTS OF THE COUNTY OF MENDOCINO, THE
COUNTY OF NAPA, AND THE COUNTY OF SONOMA ON
R.18-12-005**

In accordance with Rule 6.2 of the Commission's Rules of Practice and Procedure, and the January 28, 2019 email ruling of Administrative Law Judge Semcer setting February 8 as the date by which comments are due, the County of Mendocino, the County of Napa, and the County of Sonoma (the Counties) submit these comments on the Rulemaking. The Counties have recently experienced the effects of California's evolving wildfire risk, in which a single piece of overhead electrical equipment can start an inferno. The Counties also witnessed first-hand PG&E's inaugural Public Safety Power Shutoff (PSPS) events in October and November 2018. In order to prevent future wildfires and effectively safeguard its customers, de-energization practices must be significantly improved.

I. COMMENTS ON RULEMAKING

The Counties appreciate that the Commission is taking steps to examine and establish the process by which the investor-owned utilities in California should approach de-energizing their overhead electric lines in high-fire-risk conditions. Because the three large

investor-owned utilities have different levels of experience with de-energization,¹ the Counties surmise that their respective programs will require individualized changes. For this reason, and because the Counties are located in PG&E's service territory, these comments focus on PG&E's de-energization practices.

Issue 1: Conditions in which proactive and planned de-energization is practiced:

1(a). Should the Commission limit de-energization in specific ways?

Given the fact-intensive nature of circumstances under which de-energization may be considered, the Counties do not believe that black-letter limits should be imposed. Instead, the appropriate admonition is that PSPS events can have serious consequences for PG&E's customers and shutting off the power should therefore be a carefully considered, finely calibrated, and well-coordinated last resort.

1(b). Should [the Commission] develop metrics for determining when de-energization is appropriate?

The Counties believe that the primary metrics have already been identified: high wind conditions; low humidity; levels of dry vegetation; the age and condition of electrical system equipment; and real-time observations from utility field crews. Because the technology that models and monitors weather can be inaccurate, or can fail to present a complete picture of the conditions in specific locations, and because utility personnel cannot be everywhere at all times, the Counties recommend that local government emergency response, fire, or other boots-on-the-ground personnel provide situation reports to PG&E, as possible, during high-fire-risk

¹ SDG&E's de-energization program has been operating for years; SCE joined the de-energization discussion shortly after SDG&E began its program; and PG&E issued its first de-energization practices and protocols in September 2018.

conditions. This will allow PG&E to have a more complete picture of conditions in its service territory in real time.

1(c). How much discretion should the IOUs have in calling de-energization events?

Assuming the IOUs have reasonable criteria, a rational decision-making process, and have worked to mitigate potential impacts, they should have wide discretion in calling a PSPS event.

1(d). Are there other guidelines [the Commission] should apply to de-energization?

The Commission should consider directing the IOUs to reconfigure their electrical transmission and distribution systems to be better-suited for potential de-energization.

Developing greater segmentation of the electrical grid and more responsive control systems will enable de-energization of targeted areas and reduce the need for wholesale de-energization of certain geographic areas.

Issue 2: Best practices and a set of criteria for evaluating development of effective programs:

2(a). What are the best tools that can be applied to different landscapes and fire conditions across California?

There is no substitute for real-time first-person reports from knowledgeable personnel. In addition to computerized modeling and monitoring, PG&E's PSPS protocols should include reports from its field personnel and local emergency operations personnel or first responders. The Commission should also encourage PG&E to explore new forecasting

technologies designed to identify potential ignition areas in advance, such as OneConcern.²

These technologies could be used in real time to inform PG&E de-energization decisions, as well as to better prepare first responders.

2(b). Are there tools deployed by the National Weather Service (e.g., Santa Ana Wind Warnings) used in specific locations in California that should be adapted and deployed elsewhere?

Coordinating with the National Weather Service and using the tools that it provides should be required for PG&E. The NWS provides information and weather warnings that are available to local governments and PG&E, which is critical in terms of helping PG&E and local governments coordinate efforts based on shared information that is readily available. Instead of using the NWS, however, PG&E established its own weather service center that provides information only to PG&E. Not only do local governments not have access to PG&E's internal weather data, but PG&E has not been effective at communicating its internal information to local governments and first responders. Moreover, the Counties are not currently certain how accurate PG&E's internal weather data is compared to the information provided by the NWS.

The Counties cannot stress enough the importance of PG&E and local governments working off of the same information in a high fire-threat situation that may involve shutting power off. If the utility and the government personnel in the affected area are not using the same information, there is little chance of effective communication or coordinated response to an emergency situation. The Counties' strong preference is for PG&E to use the NWS as the primary source of weather data in de-energization events; to the extent PG&E relies on its

² <https://www.oneconcern.com/product> (last visited February 6, 2019).

internal data, that information must be made available to local governments through a web portal or other access point that does not rely on PG&E personnel relaying the information.

2(c). How should programs be designed for use of new technologies and for continuous improvement?

The Commission should consider establishing a standing Electrical System De-Energization Public Safety Advisory Committee to evaluate current technologies and practices, and to provide feedback and recommendations for improvement to the Commission and the utilities. The IOUs could be asked to provide annual updates on their programs, following the end of fire season, with feedback on the use of technology and lessons learned. A review process like this would support cross-leveling best practices across the three large IOUs.

PG&E should also be required to develop a web-based information portal for state and local public safety personnel, which would allow access to up-to-date information and maps of potentially affected areas. Providing secure access to this type of information is crucial for local first responders to clearly identify which communities and infrastructure are at risk. Additionally, this approach would reduce the instances of different information being provided to different people.

Issue 3: Notification to the public, local governments, critical facilities, and emergency responders.

3(a). What are the best ways to notify the aforementioned parties of a planned de-energization event and when power will be restored in the event of de-energization?

The question of *how* to provide notice of a potential PSPS event comes after the question of *whom* to notify. In terms of alerting emergency responders and local governments,

the Counties have observed that PG&E appears to lack a clear idea of what “first responders” means and how communication should be prioritized at the various stages of a PSPS event. In terms of disseminating information and providing notice to the public of potential de-energization of power lines, it is likely more critical that PG&E communicate with local government Public Information Officers and Offices of Emergency Services than local law enforcement and fire departments.

PG&E should also explore leveraging local governments’ emergency notification systems—such as Nixle, Nextdoor, and Reverse 911—to provide effective notice of information that may affect local residents. Local governments will generally have more accurate information about their residents’ needs, and will have more experience providing emergency notifications, than PG&E. This is subject to the caveat that, if the power is shut off, the local emergency notifications generally stop working; PG&E should coordinate with local governments to provide backup generation or alternative emergency communication platforms for those times when electric lines must be de-energized.

Effective communication with local governments, critical facilities, and emergency responders is crucial to ensure that basic infrastructure and safety services are not adversely affected. Shutting off electricity affects the Counties’ critical infrastructure, such as radio tower communications, water and fuel pumps, hospitals, and camera networks. De-energization also impacts resources and communication channels for first responders, tactical situational awareness, and the Counties’ ability to effectively communicate with residents through alert and warning systems. Effective communication about the duration of a de-energization event is also necessary. The length of a PSPS event will almost always exceed the battery backup capabilities of cell towers and generators, which increases public safety risks for

both residents and first responders. Early communication between PG&E and local governments and first responders, and effective protocols for how to coordinate during a PSPS event, will minimize disruptions to these critical functions when power lines need to be de-energized.

3(b). Do notification standards differ for vulnerable populations?

Yes. For vulnerable populations, the work of ensuring proper notice has to begin long before a PSPS event occurs. PG&E cannot provide effective notice if it does not have an adequate list of vulnerable customers or an understanding of their needs.

One of the most significant issues the Counties observed during the 2018 PSPS events was that PG&E's method of cataloguing its medically vulnerable customers is problematic. The Counties' understanding is that PG&E used its list of customers that signed up for Medical Baseline service, and that, in some circumstances, the "customer" is actually a meter, not a person. Using the Medical Baseline registry is problematic because that program is significantly under-enrolled. The requirement that customers self-register presents a barrier to entry for people who have limited English language capabilities, cognitive issues or severe physical impairments, sensory disabilities, medication or other substance impairment, and psychosocial instability. In the midst of the winter 2018 PSPS events, Napa County learned that PG&E's Medical Baseline registry led PG&E to believe there were 146 medically vulnerable residents in the County; the County's own In Home Support Services records identified over 900 medically vulnerable residents. Napa County also learned that some of the "customers" PG&E identified were actually meters associated with master-metered mobile home parks or multi-tenant buildings.

Issue 4: Electric utility coordination with state and local level first responders when they call a de-energization event.

4(a). How do the IOUs coordinate with state and local first responders?

PG&E relies on local representatives or community liaisons to make initial notifications to first responders of a potential PSPS event; contact is generally made by email. There are multiple PG&E employees responsible for communicating with local governments in the lead-up to a PSPS event. For instance, Napa County has a PG&E government representative, who communicates with elected officials and upper management, a PG&E representative for law enforcement, and a third representative who communicates with local fire officials.

4(b). What is working and what is not working in this coordination?

Some aspects of PG&E's de-energization practices are helpful. PG&E has committed significant resources to develop relationships with local governments and first responders; developing these networks enables local governments and public safety leaders to open channels of communication early in the PSPS process and has allowed for discussion of potential timing of de-energization events and potentially affected areas. The Counties have appreciated PG&E's pre-PSPS outreach efforts to local governments, which included briefings and tours of PG&E's safety operations center for elected officials. During the PSPS events in winter 2018, PG&E provided advance notice that it was considering de-energization; PG&E made itself available for conference calls and shared information on the approximate numbers of customers and general geographic areas that could be affected. After the PSPS event where power was turned off, the Counties received final confirmation from PG&E of the number of impacted customers.

Many more aspects of PG&E's de-energization practices, however, are not working well. In the Counties' experience, PG&E representatives' communication with the separate groups of local officials has not, in the case of the 2018 PSPS events, been coordinated or particularly effective. Napa County observed that certain PG&E representatives had access to more accurate and up-to-date information than other representatives, which caused Napa officials to scramble to find the PG&E representative with the best information or to try to verify the accuracy of the information provided by other representatives. Sonoma County observed that the initial notice of the PSPS events provided by PG&E to local first responders and customers sometimes occurred simultaneously and sometimes contained inconsistent messaging about potential timing and which areas might be impacted. Sonoma County also observed that PG&E representatives were not well-informed regarding the utility's real-time activities, which meant extra time was spent obtaining answers and information from PG&E's internal operations. The Counties have also observed that PG&E personnel in the field do not appear to have decision-making authority, which frustrates the Counties' and first responders' abilities to take decisive action in response to a developing situation.

PG&E has so far been unable to provide detailed information regarding the circuits that would be de-energized until an hour before de-energization, and PG&E has yet to provide maps of the shut-off circuits and impacted areas. Sonoma County observed that, during the October 15, 2019 event, PG&E's public information regarding de-energization unnecessarily alarmed residents outside the PSPS area. PG&E's map of the shutdown areas was misleading and caused notable concern and confusion because the map was not specific enough about the areas in which PG&E planned to shut off the power. For instance, the map included areas of Santa Rosa and a large portion of the western part of Sonoma County, while the actual PSPS area

would only affect a small number of residents in the northeastern part of the County. This lack of specific information also frustrated County emergency management officials because PG&E could not provide real-time situational awareness beyond what it was sharing with the general public.

It is also not clear to the Counties what criteria PG&E uses to determine when to call a PSPS event and when to cancel it. The Counties became aware of PG&E's official PSPS Policies and Procedures during this proceeding, but the actual decision-making the Counties witnessed during the winter 2018 PSPS events did not evidence clear criteria or a coordinated process.

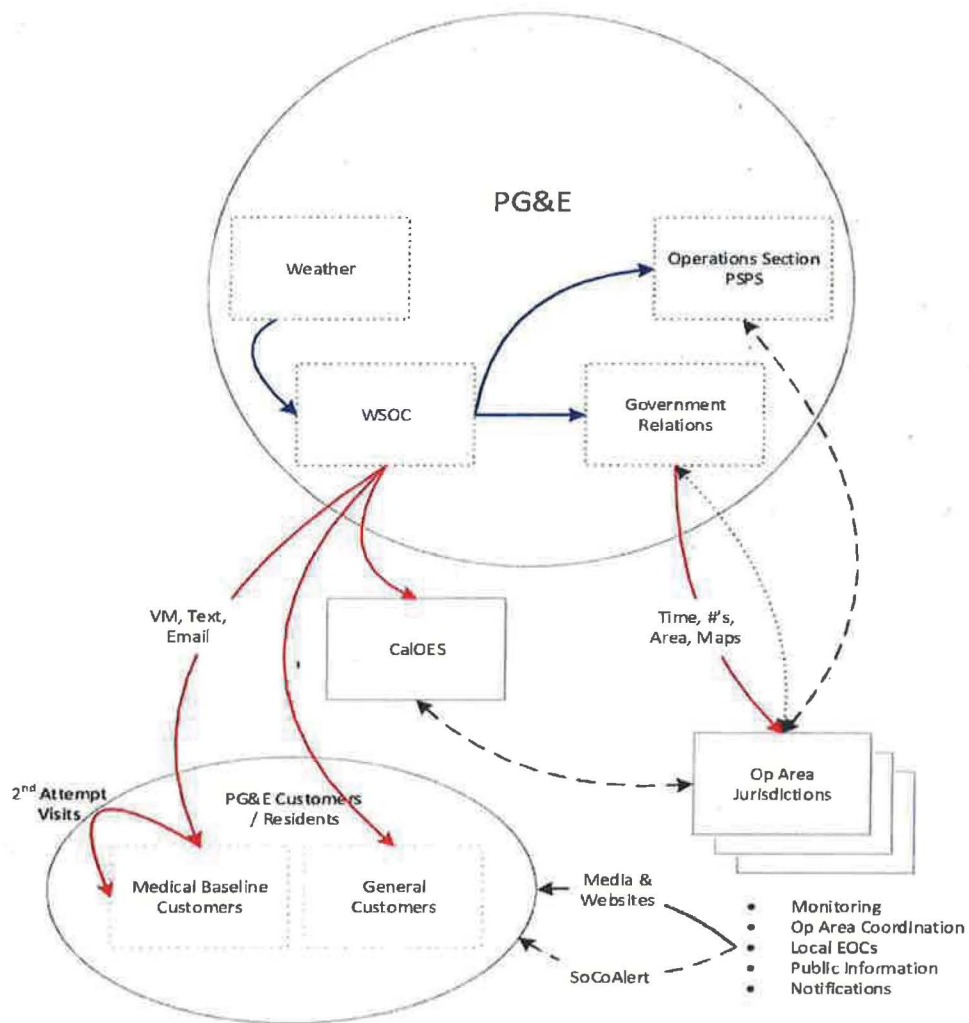
Finally, the Counties note that the costs to local governments for public safety response during PSPS events is heavily impacted by the level of uncertainty from PG&E. Local governments incur significant costs for staff overtime and disruption of operations beginning in the early stages of a PSPS notification and continuing for the duration of the event. This can include increased staffing for emergency management, public communications, dispatch, fire, law enforcement, and emergency operations centers. If PG&E continues to overstate or misstate the areas that will be impacted, if PG&E is unable to provide accurate information about the situation in real-time, and if PG&E is unable to communicate effectively with local governments, local emergency and public safety resources will be expended unnecessarily. If PSPS events are to become a regular event for PG&E, public safety capabilities will be stretched thin and will negatively impact local jurisdictions' budgets and resources, which will create the need for financial assistance or austerity measures.

4(c). What changes are required to ensure better coordination?

Formalized protocols that outline the roles and responsibilities of PG&E personnel and local government and first responders are necessary to ensure effective notification and coordination. These protocols should be validated and updated annually with lessons learned from the most recent fire season, and should include communications exercises or workshops. As local government, public safety, and PGE staff rotate out and new staff come in, maintaining institutional knowledge and proficiency will be challenging due to the fact that de-energization events generally occur on only a few occasions during a certain time of year. Annual updates to the PSPS protocols, combined with training, will help maintain a sufficient level of knowledge and experience.

PG&E should adopt a Standardized Emergency Management System (SEMS) model for communication with local governments relating to de-energization events. Many local governments use SEMS and find it to be effective. Under a SEMS structure, there would be clearly established roles and responsibilities within PG&E and the local governments, as well as established communication protocols. PG&E Operations would talk with local Operations; PG&E Public Information Officers would talk with local Public Information Officers; PG&E command would talk with local command, and so on. Ensuring ahead of time that everyone knows who their utility and government counterparts are, and that everyone understands with whom they are to communicate, will reduce chaos and improve communication.

The following chart, which is part of the Sonoma County Plan,³ illustrates the complex notification and information-sharing relationship among PG&E departments, public safety agencies, and the public:



Adopting the SEMS structure for communications will be an important step for PG&E toward more effective coordination with local governments, but it is not sufficient in and

³ Sonoma County, Department of Emergency Management, Sonoma County Operational Area Electrical System De-energization Response Plan (2018), available at https://sonoma-county.granicus.com/MetaViewer.php?view_id=2&clip_id=855&meta_id=253922.

of itself. Increased planning and communication with local governments to ensure that all entities responsible for planning for, and responding to, PSPS events are adequately prepared. The center of gravity for developing and processing hazard information in California's SEMS system is the County/Operational Area. Because most of the wildfire hazard in PG&E's service territory is located in unincorporated areas, counties play a key role in monitoring and responding to emergency situations and therefore need to develop greater capabilities than most other levels of government to address de-energization events. The counties need PG&E's support and partnership to develop training and exercise programs for contingency planning, communication, and response. Furthermore, de-energization events do not activate state or regional Emergency Operations Centers, often due to insufficient lead time or the fact that the state agency's mission does not extend to de-energization. Because the full extent of resources available to the public are not utilized during PSPS events, CalOES representatives should be placed in PG&E's Operations Center during high fire-risk events in order to facilitate an increased level of emergency management and situational awareness information to and from the Operational Areas in the field—as is currently the practice between the Counties and CalOES during most other regional emergency incidents.

PG&E must also provide accurate and detailed information about the areas that will be affected by the PSPS event, as well as maps of the circuits that will be shut off, with as much advance notice as possible. Regardless of the amount of lead time, PG&E must provide this information. PG&E must also ensure that its representatives are well-informed and kept apprised of developments and decisions in real time.

Issue 5: The extent to which the electric utilities' systems are in compliance with and align their systems with California's Standardized Emergency Management System framework (SEMS).

The Counties do not believe that PG&E's current system aligns or complies with California's SEMS framework. The Counties do, however, recommend that PG&E conform its PSPS communication and notification practices to the SEMS structure.

Issue 6: How to mitigate the impact of de-energization on vulnerable populations.

6(a). What are the impacts of de-energization on vulnerable populations, and what can the Commission and IOUs do to minimize these impacts?

As described in response to Issue 3, above, one of the primary impacts to vulnerable populations of shutting the power off is that critical medical equipment, or medications that require refrigeration, can be adversely affected. Patients who have left ventricular assist devices, ventilators, oxygen concentrators, electric wheelchairs, home IV infusion devices, home dialysis, tube feeding pumps, suction pumps, and electric beds are particularly impacted by loss of electricity. Shutting off the power can also harm individuals and communities in remote areas, particularly if communications towers lose power and deprive these residents of phone service. Whether populations are medically vulnerable or vulnerable due to remote location, the most crucial elements of de-energization are effective notice of a potential PSPS event and protocols to address the needs of these residents if and when the power goes out.

The Commission should ensure that PG&E develops a method of identifying and tracking vulnerable persons that will be accurate and allow PG&E to make contact before a de-energization event. The current practice of relying on the Medical Baseline registry is inadequate. PG&E must partner with the health and social services agencies of the communities that it serves—particularly In Home Support Services for aging and vulnerable adults, California Children’s Services for children with disabilities, and Emergency Medical Services and MediCal Managed Care agencies to obtain a more accurate count and contact information for medically vulnerable residents that must be reached before the power is shut off. Additionally, Health and Human Services’ emPOWER program compiles data on Medicare beneficiaries that are on power-dependent life-sustaining equipment and medications.

In addition to notice, PG&E should also work with these agencies, and long-term care and skilled nursing facilities, to develop protocols to ensure that medically vulnerable people are able respond to a PSPS notification. These efforts should include helping facilities install backup generation and developing protocols for helping homebound vulnerable populations obtain backup power or to leave their home if a long-term outage is anticipated or occurs. PG&E should also work directly with hospitals and other medical facilities in elevated fire-risk zones to develop protocols for responding to PSPS events. The St. Helena Hospital, for instance, is in a Tier 3 fire risk zone, and the Counties understand that the transmission line that serves the area in which the hospital is located also runs through a Tier 3 zone. The hospital has backup generation, but it cannot perform certain procedures when operating on backup generation, and de-energization may require emergency services to be diverted. The hospital also lost approximately \$150,000 due to canceled procedures and treatments during the October 2018 PSPS event, which did result in de-energization. Because not all PSPS events will require

actual power shutoff, it is crucial that medical care facilities be timely notified of PG&E's decision-making regarding de-energizing so that procedures are not unnecessarily canceled and care is not unnecessarily deferred. In order for hospitals and other medical facilities to protect their patients as best they can in high-fire-risk conditions, these facilities may need information and support from PG&E beyond the protocols contained in PG&E's PSPS Policies and Procedures.

Issue 7: How to reduce the need for de-energization, if possible.

In addition to system hardening, vegetation management, and undergrounding, the Counties recommend that PG&E develop greater segmentation in its transmission and distribution system so that de-energization is more targeted and less disruptive. This will not eliminate the need to de-energize power lines in high fire-risk situations, but it will reduce the area, infrastructure, and populations impacted.

Issue 8: Examine the need for community and first responder notification improvements.

8(a). How are the current notification requirements working?

See the discussion in Issues 4 and 5, above.

The Counties have learned about the notification and communication between SDG&E and the communities that it served during potential de-energization events, and the Counties believe that SDG&E's system should serve as a blueprint for PG&E's own PSPS program. From what the Counties have observed, SDG&E's de-energization program has been effective at preventing wildfires and its community is well-informed before, during, and after PSPS events.

8(b). What additional notice requirements should [the Commission] consider?

See the discussion in Issues 4 and 5, above.

Issue 9: Examine best practices around the country or the world in implementing de-energization.

The Counties believe that SDG&E's de-energization program provides a useful template on which PG&E's nascent PSPS program can be modeled, particularly in terms of how the utility communicates with its customers and local government.

Issue 10: Develop reporting and notice requirements that best serve Californians.

See the discussion in Issue 11, below.

Issue 11: What data should be collected when IOUs initiate a de-energization event, during and after these events?

The communities impacted by the PSPS event should be surveyed at the local government, first responder, and resident levels to provide first-hand information about how well notice, communications, coordination, decision-making, and other elements of the utility's program worked in practice. A formal after-action report process should be completed for de-energization events to identify lessons learned and designate the parties responsible for implementing any corrective actions. After-action reports should also be used to develop a database of impacted residents, vulnerable populations, and infrastructure to provide a full

picture of the scope of de-energization events in a particular service territory or geographic region.

II. OTHER ISSUES

A. Category and Need for Hearings

The Counties do not object to the preliminary categorization of this proceeding as quasi-legislative. If the parties and Commission subsequently determine that this proceeding would be more appropriately categorized as ratesetting, the Counties would have no objection.

The Counties do not object to the preliminary determination that hearings will not be necessary, though the Counties will not object if it is later determined that hearings are required.

B. Schedule

The Counties generally support the revised schedule, provided in TURN's comments on this Rulemaking, that disaggregates the issues of notification, mitigation and reporting, and PSPS criteria so that the Commission can focus on each issue more closely.

The Counties do, however, believe it is necessary for PG&E to have interim criteria for PSPS events in place, coupled with protocols to effectively act when enough criteria are triggered that de-energization may be necessary, before the 2019 fire season starts. The criteria identified in PG&E's PSPS Policies and Procedures are a good starting point. PG&E should work with the local governments it serves to improve lines of communication and to develop effective information-sharing protocols before the 2019 fire season. The PSPS criteria and protocols can be further developed, as necessary, as proposed in the intervenors' revised schedule.

III. CONCLUSION

The Counties support the Commission's efforts to ensure that the investor-owned utilities have effective de-energization practices and protocols in place before the 2019 fire season starts. Notice and effective communication are crucial to ensuring the safety of the public if there is a possibility the power might be shut off. Coordination with local governments and first responders must begin long before weather conditions threaten overhead power lines, and must be an ongoing dialogue to ensure information is up-to-date and action plans are well-oiled. The Counties look forward to working with the Commission, the other parties, and PG&E to improve and refine the current PSPS practices and procedures.

Respectfully submitted February 8, 2019, at San Francisco, California.

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By /s/Megan Somogyi
Megan Somogyi

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of Napa, and the County of Sonoma

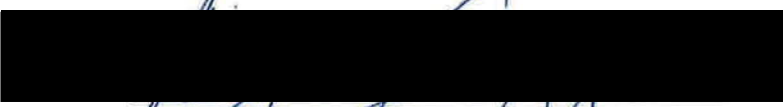
VERIFICATION

COUNTIES OF MENDOCINO, NAPA, AND SONOMA

I, Megan Somogyi, am outside legal counsel for the County of Mendocino, the County of Napa, and the County of Sonoma (Counties). I am authorized to make this verification for and on behalf of the Counties, and I make this verification for that reason in accordance with Rule 1.11(d) of the Commission's Rules of Practice and Procedure, as my office is located in the County of San Francisco. I have read the *Comments of the County of Mendocino, the County of Napa, and the County of Sonoma on R.18-12-005*, and I am informed and believe that the matters therein are true and on that ground I allege that the matters stated therein are true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed at San Francisco, California on February 8, 2019.



Megan Somogyi, Partner
Goodin, MacBride, Squeri & Day, LLP

Counsel for the County of Mendocino, the County
of Napa, and the County of Sonoma

ATTACHMENT F

PG&E Response to CEJA Data Request No. 1, Question 7

PACIFIC GAS AND ELECTRIC COMPANY
Wildfire Mitigation Plans
Rulemaking 18-10-007
Data Response

PG&E Data Request No.:	CEJA_001-Q07		
PG&E File Name:	WildfireMitigationPlans_DR_CEJA_001-Q07		
Request Date:	February 14, 2019	Requester DR No.:	001
Date Sent:	February 22, 2019	Requesting Party:	California Environmental Justice Alliance
PG&E Witness:	Joe Herr	Requester:	Deborah Behles

QUESTION 07

In relation to your plans to develop resilient communities, have you considered how to prioritize communities that are more vulnerable to wildfire risks due to socioeconomic factors? If so, please describe how you are planning to prioritize these communities, and if not, please describe why not.

ANSWER 07

Resilience Zones are one of several strategies that PG&E is developing to alleviate the risks and impacts of proactive de-energization on our communities. Resilience Zones are designed to reduce outage impacts by enabling central community resources, where technically feasible, such as; food, fuel, hygiene, shelter, medical, and critical infrastructure to remain energized while the broader area is shut off to reduce ignition risk.

Because Resilience Zones target shared community resources in commercial corridors rather than residential areas, sites for development in 2019 are currently being targeted based on factors such as the likelihood that they will experience extreme wind events, PSPS impacted circuits, proximity to non-impacted resources, and the nature of the community resources that would be kept energized via a Resilience Zone, rather than the explicit socioeconomic factors of residents in the area. Corridors in Tier 3 HFTDs that feature providers of critical services (i.e. fire stations, health facilities, etc.) and services that maintain a sense of community normalcy (i.e. grocery stores, gas stations, etc.) are some of the most important targets for Resilience Zone development this year.

That said, CalEnviroScreen has and will continue to be used to identify areas with disadvantaged communities fitting the community-resource targeting criteria for Resilience Zones. As PG&E completes its Resilience Zone pilot, it will work with the respective Offices of Emergency Services including, when appropriate, the local Health and Human Services to align with regional emergency planning thereby providing awareness to customers of available resources.