

Go Big to Connect Public Information to Analysis and Action to Protect Public Safety!

Comments on PG&E's Application 19-07-019 to Develop and Operate a Mobile App to Improve Public Safety as an Immediate Corrective Action for the CPUC Investigation, OII.19-06-015, into 2017 and 2018 Fires Associated with PG&E Infrastructure and Practices



Catherine Sandoval
Associate Professor

Santa Clara University School of Law
Workshop Comments

February 12, 2020

California Public Utilities Commission

- **CPUC OII.19-06-015, Investigating 2017 fires linked to PG&E practices and 2018 Camp Fire Ordered to Develop an App**
- As an **Immediate Corrective Action** the CPUC ordered PG&E to submit an application to develop:
- An open source, publicly available mobile app that allows a Geographic Information System-equipped phone to send pictures of utility infrastructure (e.g., pole) to an asset management system/database maintained by PG&E.
- The asset management system/database would include at least the following detailed information – GIS coordinates, attachments, operations and maintenance records and GO 95 requirements.
- The asset management database will also include any pictures received through the mobile app so that the photos of potential problems are accessible to the general public.



Photo from S.F. Gate
Wine Country Fires, 2017

- **CPUC OII.19-06-015, Ordered to Develop an App**
Pgs. 17-18, Ordering Paragraph 13
- PG&E shall also provide the following information for each photo received through the mobile app:
 - 1) whether the photo identifies a problem;
 - 2) whether the problem presents a safety concern or is a violation of safety regulations;
 - 3) PG&E actions to remedy the matter; and
 - 4) when the remedial action was or will be taken.
- This information shall be posted into the asset management database within 30 days of receipt of the photo through the mobile app.
- **Ordering Paragraph 13: The costs to develop and operate the mobile app and asset management system/database will be at shareholder expense.**





Photo: Tier 3 High Wildfire Danger Area, Los Gatos, CA, Utility pole wrapped with dead vegetation, Photo by Prof. Catherine Sandoval, May 2019

App Goals:

- *Public Reporting of Risky Conditions

- *Supplements PG&E

Workforce efforts including inspection by workers, LIDAR, and drones

- * App must connect information to analysis and remedial action

- * App facilitates accountability through public display of photos, reporting of action

CPUC Assigned Commissioner Rechtschaffen's November 14, 2019 Scoping Memo identifies the issues to be decided in A. 19-07-019 as:

1. Whether a pilot mobile app complies with the directives in I.19-06-015.
2. Whether the parameters of the pilot are reasonable.
3. Whether the results of the pilot indicate that a mobile app can specifically improve public safety.
4. Whether the metrics and process for evaluating the effectiveness of the mobile app are reasonable.
5. Are there any other relevant safety considerations associated with the pilot.

PG&E's Application 19-07-019 and Reply Comments Proposes a Limited Pilot of the App & the Asset Database, though the CPUC did NOT order a Pilot in OII.19-06-015 as an Immediate Corrective Action.

PG&E should not be allowed to go small for a big problem!

PG&E's Proposed Pilot limited to invitation-only participation in Tier 2 and Tier 3 High Fire threat areas is not sufficient to harness public identification of hazards and connect public information to action.

App and website should be publicly accessible to all, not an invitation only pilot. Launch should include broad outreach.

The CPUC Ordered a 21st Century Internet-based publicly accessible reporting App connected to databases, analysis, and action



Red= Tier 3 (Highest Fire Threat zones)
Sand= Tier 2 (High Fire Threat zones)
in CPUC Fire-Threat Map, Jan. 2019,
<https://ia.cpuc.ca.gov/firemap/>

PG&E proposed an invitation-only App pilot (using a web-based portal connecting to Apps) in Tier 2 and 3 High Fire Threat Areas.

PG&E power shutoffs in October 2019 included many Tier 2 areas, and areas that were not in high fire threat zones

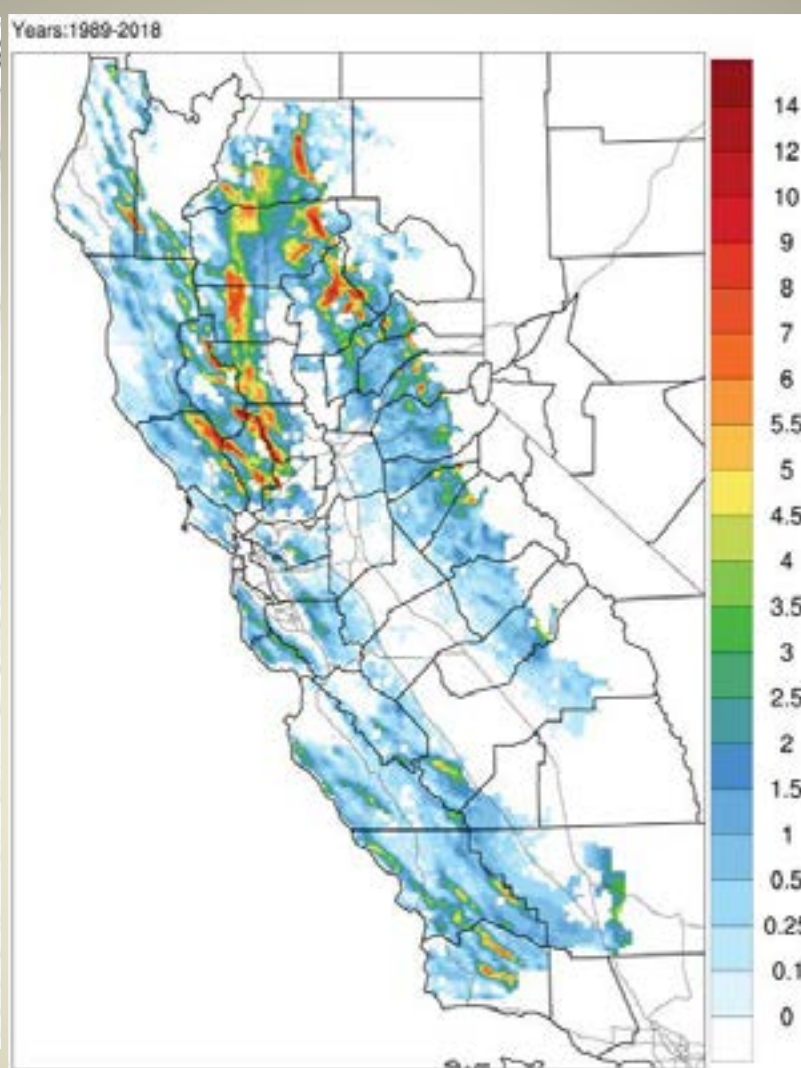
App design and process must integrate information about location of ***safety hazards, high wind areas, and fires in 2015-2020***

High winds toppled trees leading to down power lines on Feb. 9, 2020.

Must identify locations and recognize threats to public and infrastructure safety that may occur outside Tier 2 and 3 Fire Threat Areas



Red= Tier 3 (Highest Fire Threat zones)
 Sand= Tier 2 (High Fire Threat zones)
 in CPUC Fire-Threat Map, Jan. 2019,
<https://ia.cpuc.ca.gov/firemap/>



Average Annual Number of
 "Diablo Wind" events, PG&E
 Wildfire Mitigation Plan,
 2020, pg. 5-45

Analysis needed of correlation between high wind areas, high fire threat areas, infrastructure risks, asset conditions, and population characteristics

App and database system design should reflect and enable layered analysis and risk reduction action



PG&E's Application states that for the public "Existing reporting pathways include 24/7 telephone report lines (800-743-5000) and emergency response (9-1-1),"



PG&E characterizes the Mobile App as an alternative for non-emergency issue reporting.

The public should not be limited to phone reports to PG&E, posting on 3rd party sites, or reporting to the CPUC not connected to utility databases



Photos allow expert analysis of the conditions photographed.

App database System should use Artificial Intelligence (AI) to help analyze photos, identify hazards, referrals, and CPUC rule violations



PG&E reported “More than 100 instances of damage were found during inspections, including trees into lines and downed power lines, with the analysis of additional damage reports ongoing. It is possible that any one of these instances could have been a potential source of ignition had a PPS not been initiated.”

PG&E’s website makes 12 photos available re: infrastructure damage during October windstorms

https://www.pge.com/pge_global/common/pdfs/safety/emergency-preparedness/natural-disaster/wildfires/Preliminary-images-and-damage-report.pdf

Need more publicly available precise data and 21st century reporting about hazard locations and types.

PG&E and the CPUC must LEARN FROM incidents and incorporate that learning into action including the App design and asset management database, Wildfire safety plans, and decisions about Investigations.

PG&E map of system damage during October 2019 power shutoffs, published by Fort Bragg Advocate, <https://www.advocate-news.com/2019/10/19/pg-e-power-shutoff-shouldnt-have-happened-in-humboldt-county/?obref=obinsite>



CPUC Fire-Threat Map, Jan. 2019,
Red= Tier 3 (Highest Fire Threat zones)
Sand Color = Tier 2 (next highest Fire Threat Zones)

App and Asset System Development Needs to Interrelationship of Factors that Contribute to Hazards:

Wildfire and Wind danger areas

High wildfire danger zones,
High wind zones

Infrastructure Risks

Infrastructure age
Infrastructure type, e.g. uninsulated lines, particularly in high wind areas

Vegetation Risks

Tree and vegetation information, e.g. high fire danger trees such as Eucalyptus or Sycamore, and information from tree surveys

Population factors including:

Medical baseline participants
Diabetes prevalence info and other medical conditions that depend on refrigeration
Incomes, particularly low incomes that make temporary relocation unaffordable
Internet access and subscription gaps

Public Safety factors including:

Evacuation Difficulties such as in Paradise, CA



CPUC Decisions including D. 16-08-018 and D. 14-12-025 called for **shared learning** as part of **Risk-based utility operation and the framework for alignment of resources and risks in ratemaking.**

Need to identify risk interrelationship and layers, e.g. fire hazard & high wind zones, tree types & fire risk, infrastructure age or type & fire risk, other pole attacher practices & fire risk

PG&E's filing express concern about "resource diversion" for known issues.

Connecting Public reports to Asset Management Database, linked to PG&E workforce and technology-enabled database, can filter duplicate reports, highlight aging or worsening concerns, and connection information to Action and Accountability

Tier 3 High Wildfire Danger Area, Los Gatos, CA, Overgrown vegetation compromises safety and utility pole access

Photo by Prof. Catherine Sandoval, May 2019



Publicly provided information including photos about hazardous conditions and practices complements information provided by PGE's workforce and its technological surveys including LIDAR and drones

Information including public and utility photos must create a traceable line from issue or hazard identification, to analysis and classification, to workflow, referral, safety and reliability

Photos showing "Buddy pole" created by PG&E while telecom equipment delayed transition and pole after equipment properly moved following utility Pole Tour led by Professor Sandoval in May 2018



Photo: Tier 3 High Wildfire Danger Area, Los Gatos, CA, Utility pole wrapped with dead vegetation, Photo by Prof. Catherine Sandoval, May 2019

PG&E expresses concern that the public will report what it characterizes as “issues with non-PG&E infrastructure (i.e., telecom)”

Telecom and electric facilities share poles and rights of way and can create electric and public safety hazards

Vegetation on a jointly owned utility pole’s communications space creates fire ignition hazard.

CPUC OII 17-06-027 is examining interrelationship between utility pole safety and competitive access, including practices by communications and electric pole attachers that affect safety

The App and database design should facilitate reporting to the joint pole owner, attacher, and the CPUC to promptly address and resolve issues on joint poles.

Public reporting of communications issues on joint pole enhances public safety and requires appropriate referral and action. PG&E mischaracterizes such reports as an App or public knowledge problem



When a fire broke out in Lafayette, CA in October 2019 PG&E Troublemaker reported “the lashing wire of a communication cable near a PG&E open wire secondary conductor was broken,”

<https://www.sfchronicle.com/california-wildfires/article/PG-E-to-state-2-Lafayette-fires-linked-to-14568505.php>

Lafayette was not in a high wildfire threat area and PG&E left the power on during the October PSPS

Lafayette experienced high winds and has a history of high winds

Telecom facilities and practices have been associated with fires that affected electric facilities, see *e.g.* Decision 13-09-026 (Malibu Canyon Fire)

App connected to database and analytical tools such as AI create opportunities to identify and address hazards on jointly owned and jointly used poles

Photo: Jointly owned utility pole with “Peg” in communications space, blocking electric climbing space and violating CPUC GO 95 that limit days PEGs can remain on poles

Photo by Prof. Catherine Sandoval, March 2018



Jointly owned Pole with Equipment tied by Rope and Obstructed Climbing Space, Photo by Catherine Sandoval, March 2018

PG&E's Wildfire Safety Mitigation 2020 Proposal states "poles at highest risk of being overloaded are jointly owned, Class 5 (smallest pole) with both primary and secondary conductors and multiple communication attachments." p. 5-134

Public photos can inform PG&E's pole loading calculation and risk models described in its Wildfire Safety Mitigation Proposal

Replacing uninsulated wires with insulated wires (covered conductors) will increase pole loading which may require pole replacement.

CPUC enforcement and referral of Telecom and other conditions on poles is critical to supporting safer facilities and operation

PG&E's 2020 Wildfire Safety Mitigation Proposes increased use of Cameras and weather monitoring equipment.

Figure 5-9 in PG&E's proposal shows equipment throughout the pole's length, including in the communications space

Mounting cameras, fire, and wind detection equipment on poles, whether jointly or solely owned, requires space and contributes to pole loading.

Jointly owned poles with multiple attachments preclude or complicate such equipment mounting

Information on communications space condition including public photos can assist with weather equipment planning, operation, fire and public safety



PG&E Wildfire Safety Mitigation 2020 Proposal, Figure 5-9, pg. 5-69.

Downed power line safety tips

What to do if you see a downed power line:

Never, ever touch a downed power line or go near one. Power lines are not insulated like power cords. Always assume the power line is live.

- Don't touch a downed power line or other equipment.
- Don't touch anything or anyone in contact with a downed power line.
- Keep children and pets away from a downed power line.
- Don't drive over a downed power line.

Leave the area immediately and then call 9-1-1 and PG&E at [1-800-742-5000](tel:1-800-742-5000).

PG&E,
https://www.pge.com/en_US/safety/report-emergency/downed-power-line.page

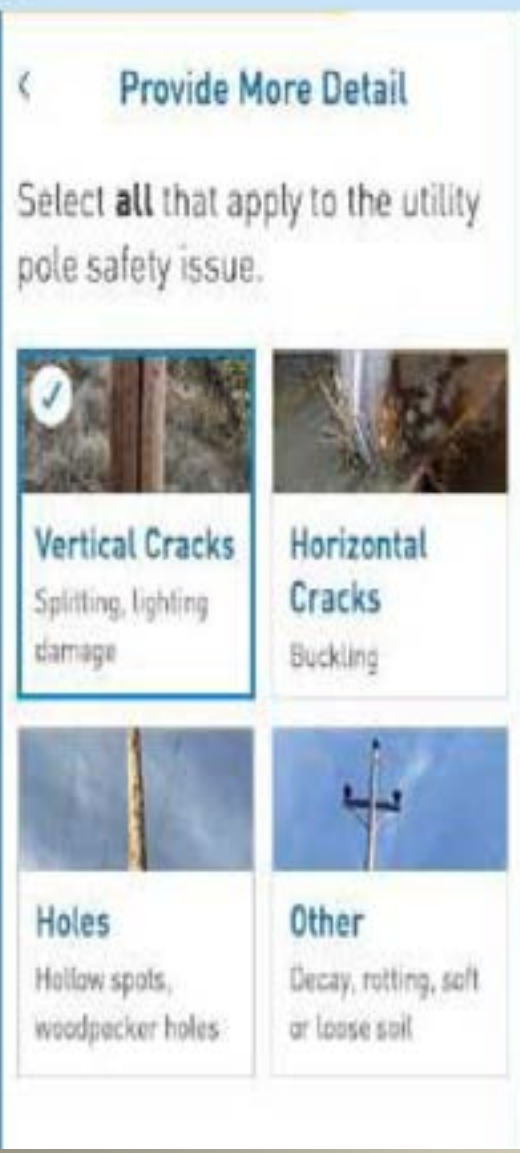
Other utilities have videos on downed power line safety

Training and Public Education:

PG&E's application expresses concern that "the general public is not trained to identify or distinguish between electric and communication assets, nor is the public trained to identify the potential for an ignition risk related to a PG&E asset."

The CPUC should order PG&E to conduct public training about electric hazards, joint use poles, CPUC rules, and safe use of Apps including downed pole line safety and traffic safety (don't stand in the street to take photos and avoid downed power lines!)

PG&E and other utilities provide downed power line safety information through campaigns and web videos



PG&E proposes to email customers in Tier 2 and 3 High Fire Threat areas to invite participation

App and website should be publicly accessible to all, not an invitation only pilot!

Launch should include outreach to public safety agencies, municipalities, tribes, non-profit organizations, universities and community colleges, and all communities affected by PSPS, areas affected by PG&E-related fires or evacuations to fight fires, high wind areas, and Tier 1-3 high fire threat areas, and the media

The CPUC’s Order to Develop an App and Database is a Pro-active Remedy for findings of potential rule violations to prevent fires and safety hazard.

PG&E proposed app, types of hazards to report



CalSPEED

California Public Utilities Commission Tools

Everyone

This app is compatible with your device.



Apps Connect Crowded Source Information to Analysis and Action

The CPUC developed the CalSpeed app to test speeds identify broadband access gaps. Public information connects to databases that inform CPUC maps of broadband unserved and underserved and inform CPUC programs

The City of San Francisco has a Mobile 311 App to report public works and safety issues including trash, potholes, etc.

CPUC Mobile Broadband testing,
<https://www.cpuc.ca.gov/General.aspx?id=1778>

SF 311 Mobile App:
<https://sf311.org/help/sf311-mobile-app#What can I do on the 311 Mobile App>

SF311 Mobile App

Click on the images below from your mobile device to install the SF311 Mobile App



The SF311 Official App has this logo in the stores!



- What can I do on the 311 Mobile App?
- What devices are able to support the SF311 app?



< What is the Safety Issue?

Please choose the type of issue you're reporting.



Utility Pole

Burnt, leaning, woodpecker damage



Wires

Birds nest, frayed, low, balloon



Equipment

Leaking, sparking, making loud noise



Trees/Branches on Wires

Tree trimming

Reporting about the App Must be Public

PG&E proposes to allow users to go to website to find out about action

PG&E should make photos, analysis, and reports about action public including during any trial period

PG&E proposed to report to the CPUC's Safety and Enforcement Division (SED) about the information gathered as part of the Mobile App Pilot and to work with SED staff to identify how this additional information might be incorporated into its existing operations and maintenance records.

PG&E should make information provided through the App public

PG&E's Proposed App, Types of Safety Issue Reporting

PG&E's design for a small pilot and lack of proposal for public training limits its effectiveness and compliance with the CPUC OII.19-06-015

Photo Sharing and Publication Can Clarify CPUC rules, promote, enforcement and public safety

After photo published by the Torts Claimants Committee for the PG&E Corp. Bankruptcy PG&E stated:

“it has already repaired parts of its system that posed an immediate danger to the surrounding community. The tape on the Cresta-Rio Oso line may have been left after a previous repair and no longer serves any purpose, according to PG&E.”

The Daily Item, Feb. 6, 2020,

https://www.dailyitem.com/region/victims-pg-e-still-has-rickety-power-line-near-paradise/article_30349f9e-ac96-563d-95ea-4907e152c143.html

CPUC OII.19-06-015 Order to develop App Not limited to addressing “Immediate dangers.” Must also identify rule violations and poor practices or conditions



C-Hook on PG&E tower with electric tape, Cresta-Rio Oso transmission line near Caribou Palermo line,

Source: Tort Claimants Committee for PG&E Corp. bankruptcy

Bloomberg Law, Feb. 6, 2020,

https://www.bloomberglaw.com/product/blaw/document/XBRH1750000000?bna_news_filter=bloomberg-law-news&jcsearch=BNA%2520000001701b6dd68caff1fbefc3d0000#jcite

The CPUC must examine whether PG&E and others are misclassifying practices such as using electrical tape on worn equipment, use of rope, and corrosion as “not a safety issue”

C Hooks and Jumper Cables have been identified by CalFire as likely fire ignition causes for the Camp Fire and Kincaid Fire.

Need more scrutiny for maintenance and operation of transmission and distribution infrastructure and its link to data and deployment



Electrical tape used for communications conduit attached to utility pole, San Jose, California, photos by Catherine Sandoval, November 2018

CPUC must Enforce rules re: use of electrical tape and other “temporary” measures and ensure ENFORCEMENT of its rules including GO 95 and other rules, orders, standards, decisions, and statutes



STATE OF CALIFORNIA
RULES
FOR
Overhead Electric Line Construction



Prescribed by the
PUBLIC UTILITIES COMMISSION

OF THE
STATE OF CALIFORNIA
GENERAL ORDER No. 95

- Risk-Based, Public Informed, Learning Matrix for Electric Utility Operation and Regulation, Proposed by Professor by Catherine Sandoval



The CPUC must make Workshop information accessible for public comment and the decision record.

The CPUC must ensure that the Workshop webcast remains accessible. The tinyurl from the Dec. 3, 2019 workshop no longer allows access.

The CPUC set A. 19-07-019 comment deadline as February 21, 2020, with reply comments are due March 6, 2020.

Prior to the Comment deadline, the Assigned Commissioner, ALJ and CPUC staff should prepare and issue a Workshop report to inform comments and bring the Workshops into the proceeding record.

Workshop report can be comprised of presentations submitted, links of the video of the workshop, and a brief summary of key topics and issues discussed. Workshop report and comments and reply comments on report allow for CPUC consideration of the workshop in the proceeding decision.

Thank you for Opportunity to Comment at this Workshop

Catherine Sandoval, Associate Professor

Santa Clara University School of Law

Co-Director, High Tech Law Institute, SCU Law

Co-Director, Broadband Institute of California. SCU Law

Former Commissioner, California Public Utilities
Commission, Jan. 2011-Jan. 2017

Csandoval@scu.edu

