A.19-07-019

PG&E Safety Reporting Mobile App Pilot

S T A F F R E P O R T

W O R K S H O P 2

February 12, 2020

San Francisco

California Public Utilities Commission
Safety Policy Division
Safety Advisory Branch

Jeremy Battis
May 8, 2020

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A.19-07-019 Assigned CPUC Decisionmakers and Staff

Assigned Commission Decisionmakers

Assigned Commissioner Clifford Rechtschaffen

Assigned Administrative Law Judge Regina DeAngelis

Workshop Facilitator - SPD Safety Advisory

Jeremy Battis, Senior Analyst and Proceeding Lead Staff

Additional Contributing Staff - SPD Safety Advisory

Dave Ashuckian, Risk Assessment Section Supervisor

Gary Ermann, Utilities Engineer

PG&E Safety Reporting Mobile App Pilot
A.19-07-019
CPUC Safety Policy Division
February 12, 2020 | Workshop 2 |10:00 a.m. to 12:30 p.m.

CPUC Auditorium | 505 Van Ness Avenue | San Francisco

Introduction and Scope of Report

Prepared by Safety Policy Division (SPD) Safety Advisory staff, this Workshop 2 Staff Report summarizes the public workshop held in San Francisco on February 12, 2020, the second workshop in support of A.19-07-019.

Workshop 2 served to vet Pacific Gas & Electric's (PG&E) draft Pilot Implementation Plan (filed January 17, 2020) by inviting outside experts to appraise the adequacy of PG&E's proposal and offer perspective drawing from recent California examples of similar community-focused technology crowdsourcing efforts available resources, applicable standards and practices, and identification of gaps and needs. Commission staff within consumer- and safety-advocacy offices requested improved program transparency and reach. SPD staff probed PG&E's proposal to highlight areas where PG&E proposes to deviate from the Commission's ordering directive, and to call for pilot modifications perceived to improve the pilot's prospects for success and the welfare of Northern California electric customers.

This Workshop 2 Staff Report serves to document PG&E's positions as articulated at the workshop and within its filed application and plan; summarize the case study examples, best practices, and technical and legal considerations as conveyed by invited expert speakers; capture the positions expressed by parties and intervenors; and enter into the record conclusions and recommendations as presented by SPD staff.

Proceeding Purpose, Origin, and History

The Commission, on June 27, 2019, issued Order Instituting Investigation I.19-06-015, whose dicta and Ordering Paragraph 13 directed PG&E to file an application that would describe how the utility proposed to develop a smart phone app that would enable the public to submit reports and photos of problematic electric utility infrastructure such as poles.

PG&E responded by filing an Application on July 29, 2019 seeking Commission approval within a Decision and proposing a limited-term pilot program to commence in 2020.

The CPUC acknowledged PG&E's application on November 14, 2019 with Commissioner Clifford Rechtschaffen's Ruling and Scoping Memo that set forth a proceeding schedule that included public workshops culminating in an expected Commission Proposed Decision before July 1, 2020.

Workshop 1 Overview

A first workshop in support of A.19-07-019, held December 3, 2019, had PG&E present on its proposal. Also participating in the workshop were Commission staff serving the energy, safety, safety-advocacy and telecommunications business lines, who provided perspective on PG&E's proposal. SPD's Safety Advisory staff moderated the workshop, provided an overview of the proceeding's scope and schedule, and conveyed initial feedback and direction to PG&E.

PG&E provided a summary of its application that served to initiate the rulemaking; presented its preliminary mobile app concept that would enable its customers to report perceived safety issues via smartphone; and conducted a demonstration of a rudimentary prototype. PG&E also conveyed the findings of a limited informal benchmarking and survey effort it had conducted of some ten unnamed U.S. electric utilities to hear of industry trends and lessons learned as they pertain to the prevalence of safety as a feature of customer-focused mobile apps. PG&E shared that public safety reporting of problematic electrical assets had not been attempted elsewhere, and that related service reliability smartphone mobile app offerings such as an ability to report power outages were fairly common.

Subsequent to an April 2020 data request by SPD, PG&E conducted an additional survey of some 15 electric utilities in an effort to provide Commission staff with accurate and more recent data on prevailing industry trends as they pertain to consumer-oriented smartphone apps. PG&E's April 2020 survey established that there was precedent for electric utility mobile apps to allow for public reporting of problematic electrical assets – namely wires down – although no instance of a utility allowing for upload of a photo by a customer was to be found. While PG&E's survey efforts showed it to be somewhat atypical for utilities to allow for reporting by customers of problematic assets via the internet, such an offering was found to be more common within "web-based" mobile-responsive platforms than within so-called "native" apps.[1]

PG&E's survey data provided to Commission staff revealed that native apps directed to customers are common and more likely to be offered than not; and that such mobile apps are almost always bundled with a variety of features and functionality that would include power outage reporting, bill pay, energy use tracking, and other capability. Also found to be the norm was electrical utilities' practice of offering choice and redundancy in the web-based portals made available to their customers. All utilities surveyed reported offering a web-based mobile-responsive smartphone option, in addition to those who also offered a native app for download.

[1] A native application would be unique to smartphones, entail a download from an app store, and require memory storage as it is stored on a mobile device.

PG&E's survey data provided to Commission staff showed customer uptake rates for utilities' dedicated native apps generally falling within the range of four to ten percent – numbers that PG&E has indicated would be insufficient to justify the additional cost that would be required of developing a dedicated native app. Rather, PG&E asserts that its proposed approach, which would rely on a web-based mobile-responsive platform to enable smartphone reporting, offers very similar benefit and functionality at lower cost.

Finally, in examining the survey data PG&E provided to Commission staff no trend line clearly showing a correlation between mobile app rates of customer uptake and the discrete number of functions on offer was apparent. Similarly, SPD staff was unable to find within the data evidence that would support the notion of there being a prevailing industry trend among electric utilities to move to reduce safety-related features within their mobile apps.

Workshop 2 Overview

The second workshop in support of A.19-07-019 convened State and university experts with electric utility industry leaders, and Commission staff representing safety and consumer advocacy. Workshop 2 served to provide the Commission with perspective on the adequacy and appropriateness of PG&E's proposed mobile app concept, pilot scope and duration; implementation plan; and fundamental considerations such as program recruitment and marketing efforts, and performance evaluation criteria.

Roughly two-dozen participants, including regulatory, electric industry research, and consulting staff, attended the workshop in person with another dozen participating remotely via webex and telephone bridge.

All documents cited in this Staff Report available online at:

https://www.cpuc.ca.gov/General.aspx?id=6442464435

The Commission continuously adds to the Docket Card for each proceeding as documents are processed. Full record for this Rulemaking available at:

https://apps.cpuc.ca.gov/apex/f?p=401:56:0::NO:RP,57,RIR:P5_PROCEEDING_SELECT:A1907019

Workshop Agenda

10:00 - 10:20 a.m. **Introduction, Safety Message, and Rulemaking Overview and Steps Ahead**
Jeremy Battis, SPD Safety Advisory, lead analyst for A.19-07-019

10:20 - 10:40 a.m. **PG&E Presentation of Proposed Mobile App Pilot Implementation Plan**
Matthew Plumber, PG&E Regulatory Affairs, Principal

10:40 - 11:00 a.m. **Go Big to Connect Public Information to Analysis and Action to Protect Public Safety**
Catherine Sandoval, Associate Professor, Santa Clara University School of Law

11:00 - 11:30 a.m. **Adequacy of the Technical Elements and Requested Deviations in the Proposed Mobile App Pilot**
Scott Gregory, State Chief Enterprise Technology Officer, California Department of Technology

11:30 - 11:35 a.m. **B R E A K – five minutes**

11:35 - 12:00 p.m. **SPD Staff Takeaways from PG&E Pilot Implementation Plan and Recommendations**
Jeremy Battis, SPD Safety Advisory, lead analyst for A.19-07-019

12:00 - 12:20 p.m. **Public Comments and Questions**
Audience Participation and Follow-up Q&A encouraged

12:20 - 12:30 p.m. **Closing Remarks**

12:30 p.m. **A D J O U R N**

Workshop Program

Introduction, Safety Message, Rulemaking Overview and Steps Ahead

Jeremy Battis, workshop facilitator and CPUC lead staff for the rulemaking, asked that participants introduce themselves as a roll call. Mr. Battis followed with a brief overview of the emergency evacuation procedure.

Referencing prepared slides and notes, Mr. Battis provided background on the proceeding, which was mandated within I.19-06-015, Ordering Paragraph 13, issued June 17, 2019, directing PG&E to file an application to propose a safety reporting mobile app that would enable customers to transmit photos of PG&E assets that may pose a wildfire hazard.

Mr. Battis walked the audience through the steps leading to the present, including PG&E's application, the Commission's Scoping Memo that served to frame the issues within the rulemaking, and party comments received to date. Mr. Battis closed with an overview of the calendar ahead leading to an anticipated Commission Proposed Decision before July 2020.

PG&E Presentation of Proposed Mobile App Pilot Implementation Plan

Mary Hvistendahl, Director, Systems Inspections, Electric Operations

Referencing prepared slides, Ms. Hvistendahl provided an outline of the utility's position and an overview of concerns and challenges, with PG&E's overriding concern being the public's ability to effectively identify PG&E assets, and to discern any compromised or problematic status of those assets. She also pointed out that the purpose of PG&E's mobile app pilot would be wildfire risk mitigation.

The mobile app pilot, as proposed, would allow the public to report safety concerns electronically, supplementing PG&E's existing phone-hotline reporting program.

Ms. Hvistendahl described two pilot participation reach goals:

- Goal 1: obtain a minimum of 384 unique public-report submittals from within Wildfire Threat Tiers 2 and 3 areas
- Goal 2: realize a minimum of 186 unique participant app users from within the 300,000 pool of customers within Wildfire Threat Tiers 2 and 3 areas who would be emailed by PG&E with an invitation to participate

In undertaking the pilot, Ms. Hvistendahl explained, there is some risk to the public and to PG&E assets, in that the pilot may have unintended consequences of motivating some individuals to approach PG&E assets that require a safe distance. At present, she noted, PG&E utilizes elevated lookout structures and unmanned drones to survey its territory and poles.

PG&E aims to deliver the mobile app such that the utility can best ensure it's meeting the needs of the public while still adhering to established utility baseline processes, Ms. Hvistendahl said.

PG&E has in place highly skilled staff to complete field inspections, she noted, and these field inspectors are able to appropriately categorize observations. PG&E expects to tap this same talent pool to aid in operation of the pilot. Photos received from the public would be forwarded to this same PG&E team of inspectors for categorization. PG&E would use a photo and its accompanying data, including geographic coordinates, to confirm whether a PG&E asset is implicated.

Depending on the report and PG&E's determination, the matter could be referred to PG&E's pole-loading team. PG&E fully anticipates that a major challenge in running the pilot will be fielding false positives. Where appropriate, PG&E would dispatch a field maintenance troubleman. Over the course of the pilot's duration, PG&E will learn the frequency with which it must follow up on reports with a field dispatch. Again, the reality of diverting limited resources presents the potential to be a distraction, Ms. Hvistendahl explained. Because the mobile app is not intended to address emergency situations, no 9-11-level reports would be processed.

Lori Geoffroy, Director, Digital Channels, Customer Service

PG&E's proposed mobile app pilot would be web-based (as opposed to a "native" app that would require a download). Ms. Geoffroy shared that PG&E previously had offered a native app, a now-defunct bill-payment mobile app (operational from 2011 to 2017). PG&E viewed the former app's low customer-uptake levels – only six percent of its customers had downloaded the app – as unsatisfactory.

PG&E believes that its mobile app pilot, because it would not entail a download, may enjoy higher levels of customer use. Additionally, over 55 percent of web traffic received at PGE.com originates at a mobile device, she pointed out.

PG&E will designate a "triage team" to validate submissions. Anyone who submits a report would be able to view the report's status information and PG&E's response to the complaint. PG&E intends to launch the pilot four to six months after CPUC authorization, Ms. Geoffroy stated, and PG&E expects to run the pilot for six to twelve months (contingent on achieving the targeted number of responses).

Post-Presentation Q&A and Discussion Follow-Up:

California Municipal Utilities Association
Q: How would PG&E respond to a submitted photo of an asset that is not PG&E's own, but that is controlled by a different service provider, such as AT&T?

PG&E A: PG&E would use existing communication channels to report these issues to those companies.

Jeremy Battis, CPUC Safety Advisory Branch, Safety Policy Division:

Q: How important is the geocoding embedded in the smartphone data PG&E receives to having a valid and complete report? If a customer reported a PG&E asset issue afterward from their home, would that cause difficulties?

PG&E A: Assuming a digital photo is provided, any metadata revealing the asset's geographic location would normally be preserved as most digital photos are generated with such information. PG&E also expects that there will be instances where a customer was not able to safely take a photo and would need to report the approximate location after the fact. Similarly, there will be some reports received that do not contain a photo, and which necessitate a PG&E inspector field visit.

Q: A follow-up on the photo question regarding geocoding data. Would a mobile app user be required to grant user-location tracking permission to PG&E? and would receiving the locational data require taking a photo through the mobile app?

PG&E A: PG&E would not track user whereabouts on the mobile app and data would not be transmitted to PG&E without the user submitting a report. Geocoding is inherent to digital photos taken on GPS-enabled devices. The data is intact until any photo editing or modification occurs. An advantage of a web-based application, in the view of PG&E, is that users aren't limited to using their phone to capture a photo. A digital camera can also be used.

Shelby Chase, Regulatory Analyst, Public Advocates Office:

Q: How many times would PG&E ask a customer to resubmit if the photo PG&E received is not clear?

PG&E A: PG&E hasn't yet established such standards. The policy will likely entail that PG&E make a reasonable effort to contact the reporting customer and ask them to resubmit at least once or twice.

Follow-up Comment by Ms. Chase:
An important limitation with a web-based platform is the likelihood of losing all functionality if there is no internet access.

Santa Clara University School of Law Presentation Critiquing PG&E Proposed Mobile App Pilot Implementation Plan

Catherine Sandoval, Associate Law Professor

Referencing prepared slides and photographs, Ms. Sandoval pointed out that PG&E's obligation to develop a mobile app was ordered as part of a broader Commission response to the Wine Country fires of 2018. The proceeding should be viewed as a remedy and a penalty. Ms. Sandoval is concerned that PG&E is proposing a small solution to a big problem, and that PG&E's response as proposed does not comply with the Commission order.

The mobile app effort should be viewed as a means of allowing expression of public concern, Ms. Sandoval explained, but this goal is not sufficiently supported within PG&E's proposal.

More specifically, Ms. Sandoval outlined additional deficiencies in PG&E's implementation plan, as proposed, that include:

- Inappropriate success evaluation criteria for assessing value and performance of the pilot;
- Limiting the pilot's enrollment eligibility to those residing within the Wildfire Threat Tiers 2 and 3 areas, and those who are emailed an invitation;
- Insufficient demonstrated marketing, publicity, and media support plans to ensure public knowledge integral to the success of the mobile app pilot;
- PG&E's proposed mobile app as a web-based — as opposed to the downloadable "native app" variety — platform would serve as an inferior product for certain rural communities having limited internet coverage and who are among the highest risk of catastrophic wildfire;
- Insufficient attention paid to factors of and regions with high wind frequency;
- PG&E's choice to not invite photos and reports for 911-level emergency events;
- PG&E's decision to restrict submitted photos available for public viewing;

- Insufficient commitment by PG&E for how any analysis and determination of such photos would be made publicly available;

- PG&E's position that telecommunications hardware on shared utility poles does not present a fire risk, and its expressed view that public reports of such assets would be of little to no value;

- PG&E's position that the exercise of processing public reports would serve as a distraction and produce data of low value;

- The absence of a public training program to improve the quality of electric utility safety reporting by the public;

- A missed opportunity for PG&E to articulate a 21st century solution incorporating emerging technology to capture automated efficiencies and accuracy via artificial intelligence and machine learning;

- PG&E's pilot, as proposed, would do little to nothing to shift the utility's public safety reporting intake-and-response from being primarily call-center-based to web-based; and

- An insufficient approach by PG&E to apply technology to cause-and-effect and trend analysis for learning and forecasting to inform wildfire prevention.

Ms. Sandoval recommended that SPD staff draft and issue a staff Workshop 2 report, and that SPD staff produce a rulemaking homepage to ensure facilitate the public's access to information regarding the rulemaking.

Ms. Sandoval closed by recommending that the CPUC reject PG&E's mobile app application and implementation plan as proposed, and direct PG&E to refile its application.

Post-Presentation Q&A and Discussion Follow-Up:

Shelby Chase, Regulatory Analyst, Public Advocates Office:

Q: Would you propose that PG&E post every photo submitted, or just those that identify a problem?
Ms. **Sandoval A:** There should be a filter for any inappropriate or unrelated content. But what's important is that PG&E publicly display the photos, along with analysis and explanation.

Q: How would you imagine public training would function if the app were to be made available to an expanded target population?
Ms. Sandoval A: The training should be prioritized to high-fire risk areas, high-wind areas, and places affected by shutoffs. Additionally, educational means could include webinars, You Tube instructional videos, and educational organizations such as community colleges.

Ben Katzenberg, Law Student, Santa Clara University:

Q: Should PG&E have a process to forward concerns involving third-party attachments [other utility's hardware] to its utility poles?
Ms. Sandoval A: PG&E has said there is a process, but PG&E needs to be more specific about what that process is.

California Department of Technology Presentation Assessing PG&E Pilot Approach and Existing Open-source Mobile App Platforms

Scott Gregory, State Chief Enterprise Technology Officer

Referencing prepared slides, Mr. Gregory began by addressing the issue of so-called "open source" computer code, an element that the Commission directed PG&E to include within any future mobile app product. Open source code, he explained, requires a community of users and contributors to share good ideas to ensure constant improvement. For this reason, the best and most effective open source result examples can point to support from a highly-invested community of knowledgeable users. In turn, open source success assumes a high-level of collaboration and engagement.

If it's determined that a publicly-available web platform is to be open source based, it's critical to understand the prospective users and the culture of their user community, and to have in place a well-developed strategy.

Mr. Gregory next turned to the subject of geographic positioning and the concept of Potential Dissolution of Precision (PDOP). Essentially, this has to do with the reality that position accuracy can be lessened by nearby obstructions or challenging geography such as boulders and canyons. And it's important to note that smartphones possess a GPS accuracy level deemed suitable for approximation or recreational purposes, while more advanced and expensive dedicated-GPS devices — commercial grade units — offer a much higher level of precision.

Mr. Gregory provided some quick technical pointers on capturing full and accurately-useful locational data embedded within a photo critical to reliably pinpointing the position of an implicated asset reported by the public. The principle is based on directionality being tied to navigation calculation inputs such as azimuth and directional heading. He added that incorporating

multiple orientation options (covering such items as maps, imagery, and access to supporting information) would be essential.

Mr. Gregory then explained legal implications and risks inherent in incorporating an open source code approach. When an entity is considering adopting and releasing publicly an open source platform, he explained, it's highly advisable to engage strong legal counsel from a project's onset, preferably with adherence to operating guidelines. This is because an open source format can present significant legal liability.

Any sponsoring organizations would want to establish how, when, and why they share information, with an identified end-goal purpose. The stakes have grown higher and more conspicuous, he advised, with the California Consumer Protect Act becoming effective January 2020. A result is that organizations need to be aware of the new law's privacy protections and the implications for consumers, contributors, and owners of data.

Mr. Gregory offered some tips on how to prudently treat personal data, including awareness of Personally Identifiable Information (PII) and the implications of such data collection in light of the new State law. Photos may unknowingly contain PII, which could present a legal liability for PG&E, in his opinion, should photos submitted by the public be openly accessible to the public.

Mr. Gregory then addressed the issue of web-based apps vs. native (downloadable) apps. Web based platforms typically require an internet connection, he said, and for this reason it's valuable to fully grasp the difference between connected and disconnected editing. Also, one should design and build a user-directed platform with variable internet connection speeds in mind. And, he offered, it's advisable to consider ways of designing an app to broaden its reach and accessibility by including multilingual capability and features to accommodate the disabled.

Mr. Gregory concluded his presentation with an overview of a practical case study of a successful open source app example. California Department of Technology partnered in aiding the State's and local water providers' efforts at promoting water conservation with development of a consumer-focused mobile app intended to encourage the public to report water wasters by submitting a photo, description, and location.

The waste-reporting app has prompted more than 20,000 investigations of incidents of water wasting. Mr. Gregory noted that the CDT water app appears to have functioned quite similarly to the concept that PG&E is advancing with its mobile app to enable safety reporting. If PG&E were interested in adopting the CDT mobile app source code, PG&E could have access to it free of any licensing cost.

Post-Presentation Q&A and Discussion Follow-Up:

Matthew Plumber, Principal, Regulatory Affairs for PG&E:

Q: How many complaint reports were received to result in the 20,000 infractions that were investigated?
Mr. **Gregory A:** I'm unable to provide that information off the top off my head, but am happy to follow-up with you later.

Presentation on SPD Conclusions and Recommendations on PG&E's Proposed Pilot Concept and Implementation Plan

Jeremy Battis, CPUC Safety Advisory Branch, Safety Policy Division

Mr. Battis solicited input from workshop participants on opinions on identified PG&E requests for deviations from the Decision's Ordering Paragraphs. Hearing none, he turned to staff recommendations, which are that the proposed PG&E pilot should have a duration of no less than one year and include a full wildfire season; and the mobile app pilot should incorporate appropriate success evaluation criteria that appraise performance according to a standard other than one that would be applied to established permanent programs. Specifically, the absence of sufficient trial participants or cost-effectiveness were not reliable indicators of poor prospects for broader future mobile app success, he stated, nor could they reliably demonstrate pilot failure. Mr. Battis concluded by recommending that PG&E modify its implementation plan for the mobile app to include other functionalities, namely PSPS (planned power outages) alerts to impacted customers, and to allow customers to notify PG&E of local power outages, both in real time.

Final Q&A and Closing Discussion

Matthew Plumber, Principal, Regulatory Affairs for PG&E:

Comment: PG&E would like to note that aside from the mobile app pilot, the utility is experiencing significant resource constraints as it shifts staff to prioritizing Wildfire Mitigation response effort.

Dave Ashuckian, Supervisor, CPUC Safety Advisory Branch, Safety Policy Division:

Comment: PG&E receives over 41,000 safety-related calls a year from its customers. Answering these calls must consume a tremendous amount of resources. Surely an alternate method that allows customers to send a picture would be less costly and help identify issues more clearly.

How might PG&E consider how these apps might reduce the load on their call center? It seems like this kind of automation would cost considerably less than a call center fielding phone calls.

PG&E A: PG&E notes the concern and suggestion. At this time PG&E has not scoped the mobile app pilot such that it is intended to reduce calls from the public or the workload associated with fielding such calls.

Jeremy Battis:

Q: How did PG&E get to its 384 submissions threshold?
PG&E A: PG&E Didn't want to draw spurious conclusions that could result from having sample size of a too few submittals.

Q: So does that mean the 384 submissions would offer a 95 percent confidence level?
PG&E A: Not precisely, but it would allow for fairly good certainty.

Q: What happens if PG&E receives fewer than 384 unique reports?
PG&E A: The pilot will continue until we reach that number. If it's taking too long, we will reassess the pilot and confer with Commission staff.

Q: The proceeding Scoping Memo called for PG&E to confer with Cal Fire. What has been the result, if any, of those conversations?
PG&E A: PG&E has reached out to Cal Fire and expressed an interest in receiving feedback on the mobile app. So far, this collaboration remains a work in progress and it's too early to report any tangible recommendations.

Q: Similarly, what has been the result of PG&E conversations with vegetation experts?
PG&E A: Vegetation experts we spoke with were questioning whether the public can accurately judge whether any potentially problematic vegetation had proper clearance from the street level.

Shelby Chase:

Q: PG&E has a process to report streetlight outages on its website. How successful has that program been?
PG&E A: PG&E does not have this information available at this at this time. We will need to follow-up with you on that to get an answer. [Note: SPD staff followed up with PG&E to obtain this

information by way of a March 2020 data request whose response is provided as an end note to this Staff Report.[2]]

Dave Ashuckian:

Comment: It seems like the best ambassadors to getting this program off the ground would be the thousands of PG&E customers that call in. PG&E might consider directing these customers to the mobile app as a means of promotion.

Catherine Sandoval:

Q: Does PG&E currently use artificial intelligence to analyze photos from internal photos from inspections, etc.?
PG&E A: Yes, PG&E is using machine learning to develop AI to analyze photos and other data sources to make assessments.

Ms. Sandoval Comment: There is an opportunity here to redefine pilot success criteria to place a higher value on transparency, as opposed to duplicative reports and diversion of PG&E resources. This program is a massive opportunity for machine learning.

Ms. Sandoval Comment: Even if a reported tree is not encroaching on a PG&E asset in a hazardous manner, it's still valuable for PG&E to respond to a public concern about this problem. It

[2] 1a) The streetlight outages web reporting effort is currently live. Between March 1, 2019 – Feb 29, 2020, there were 2,613 submissions made to the PGE.com Report Streetlight Outage form. [available at https://www.pge.com/en_US/residential/customer-service/home-services/outages/report-multiple-light-outages/report-multiple-light-outages.page]
1b) The Report Streetlight Outage form predates the current PGE.com Content Management System (CMS) and was first made available to the public prior to 2013. PG&E has not been able to verify the launch date.
1c) Using 2019 information, PG&E received 600-1000 requests per month. Note that PG&E has been converting High Pressure Sodium Vapor (HPSV) lights to LED lights. LED lights have a significantly longer lifespan, which has caused reported outages to trend downwards overtime.
1d) Using 2019 data, PG&E estimates that 60 percent of reports originate from government agencies and 40 percent from the general public.
1e) Yes. The program is permanent.
1f) PG&E continually looks for ways to improve the tool. For example, PG&E recently updated the look of the tool on the website with the intention of improving the user experience.
1g) PG&E currently believes the tool is successful, as it provides a more efficient pathway for both the reporter (i.e., governments and customer) and the responder (i.e., PG&E) to resolve outages. False reports are very limited and typically consist of someone reporting an outage of a non-PG&E streetlight.

shouldn't be regarded as a failure for a customer to report an issue falsely, but instead an opportunity to educate and initiate a dialogue with customers about what is considered a safety problem, particularly since issues that aren't immediately a safety problem can eventually become problematic.

###

ATTACHMENTS TO STAFF REPORT

ATTACHMENT A | PG&E Presentation of Proposed Mobile App Pilot Implementation Plan

PG&E Safety Reporting Mobile App Pilot

Application 19-07-019
2nd Workshop, February 12, 2019, Commission Auditorium

Matthew Plummer, Principal
Regulatory Affairs, PG&E

Program Approach and Objectives

- **The primary focus of the public-facing Mobile App is to further mitigate Wildfire risk.**
- **Conceptually the Mobile App would allow members of the public to report potential safety concerns associated with utility infrastructure.**
  - In function, the Mobile App would parallel, but not substitute, PG&E's existing routine inspection and patrols activities and Enhanced Vegetation Management (EVM) programs.
- **To meaningfully mitigate the risk of catastrophic wildfire, the Mobile App should, at a minimum:**
  - Identify genuine safety issues that pose an ignition risk;
  - Be used in areas with wildfire risk; and
  - Identify unique issues of PG&E assets that were not, and would not, have been identified by PG&E's own routine maintenance programs.
- **PG&E's proposed pilot is designed to ensure that the results would be indicative of how a fully scaled publicly available Mobile App would perform**
  - **PG&E proposes to collect a minimum of 384 unique submittals of potential issues from members of the public in HFTD Tiers 2 and 3.**

Description of Mobile Application

- **Technical specifications of I.15-05-015 with certain exception include:**
  - (1) be an open source and (2) be publicly available;
  - (3) allow Geographic Information System (GIS)-Equipped phones to send pictures of utility infrastructure to an asset management system/database maintained by PG&E;
  - (4) allow general public to access such photos submitted;
  - (5) and to provide certain information in the asset management system/database within 30 days of receipt of the photo through the Mobile App.
- **Both a web-based and phone-based mobile application offer the necessary functionality for PG&E's mobile application.**
  - The web-based mobile application offers a greater ease of use and fits into the existing PG&E website operations
- **PG&E compared both its own experience and the experience of other utilities with customer utilization of web-based and phone-based applications.**
  - Between June 2011 and November 2017, PG&E offered a mobile payment app only 6 percent of customers downloaded the mobile payment app. Over 55 percent of all web traffic to pge.com comes from a mobile device.

Description of PG&E Process for Handling Submittals

- **PG&E would form a dedicated "triage team" to receive submittals. The Triage team would first conduct an initial review**
  - Report packages will be manually validated by a member of the triage team as non-emergency, viewable and actionable
  - Validated, non- emergency report packages, will have case number generated and will be sent to the CIRT Team.
  - The submitter will receive an order number, which they can use to find report information.
- **For each submittal, PG&E would track:**
  - A unique package identification number for tracking;
  - A unique customer or user identification number needed to facilitate accurate tracking and communication back to the customer/submitter;
  - The location of the asset identified as having a safety issues, including street name, city name and cross street information;
  - Viable asset photos, used to attain latitude and longitude coordinates required to accurately identify PG&Es equipment or asset number; and
  - status updates and resolutions for each package identification number.

Implementation Plan

- **PG&E estimates that it will take 4-6 months post CPUC authorization to prepare for the launch of the pilot and would run the pilot for 6 to 12 months.**
  - Pilot duration dependent on how long it takes for PG&E to receive at least 384 unique submissions.
- **PG&E would target customers in Tier 2 and Tier 3 high fire threat areas. PG&E would initially target customers using email and then direct mail.**

#	Milestone	Duration
1	Discovery / Planning & Analysis	2-3 Weeks
2	Design	4-6 Weeks
3	Build / Development	8-10 Weeks
4	Testing	1-2 Weeks
5	Pre- Deployment (Soft launch with employees and Refine based on User Feedback)	2-3 Weeks

Questions

Contact:
Matthew Plummer, Principal
Regulatory Affairs, PG&E
matthew.plummer@pge.com

ATTACHMENT B | Santa Clara University School of Law Presentation Critiquing PG&E Proposal of Proposed Mobile App Pilot Implementation Plan

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.

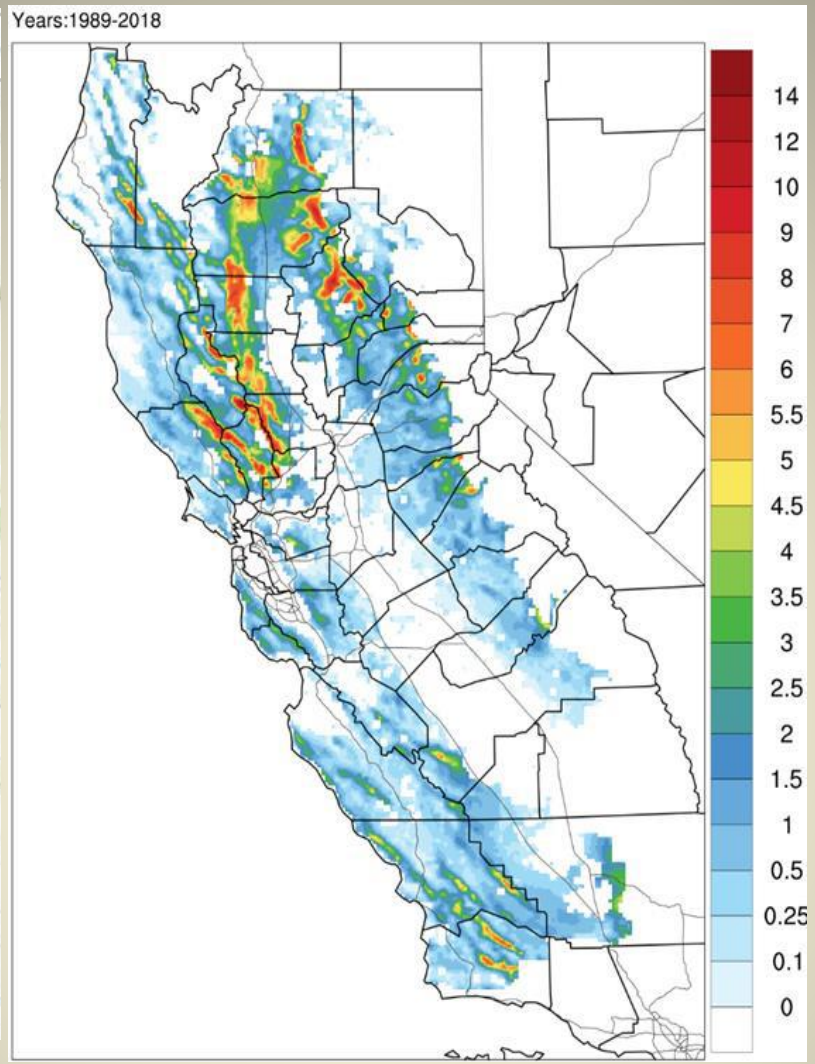
PG&E power shutoffs in October 2019 included many Tier 2 areas, and areas that were not in high fire threat zones

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

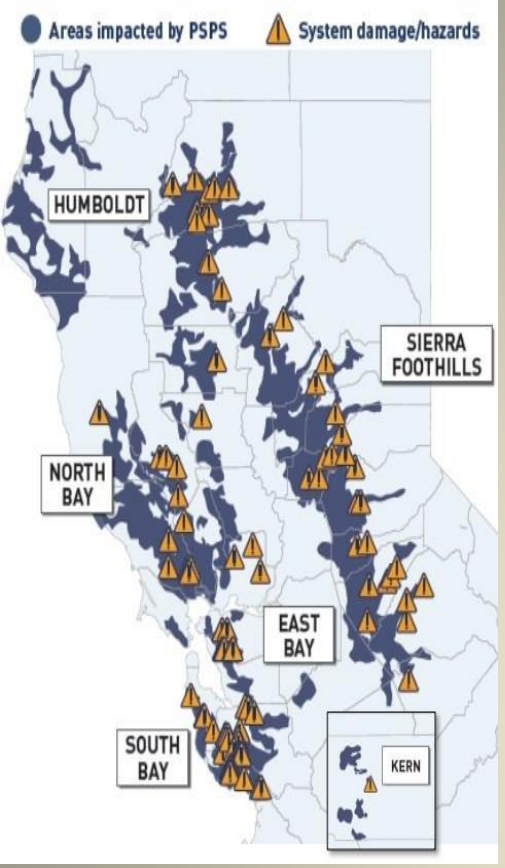
PG&E's Application states that for the public "Existing reporting pathways include 24/7 telephone report lines (800-743-5000) and emergency response (9-1-1),"

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

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 PSPS 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.

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 Account for 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

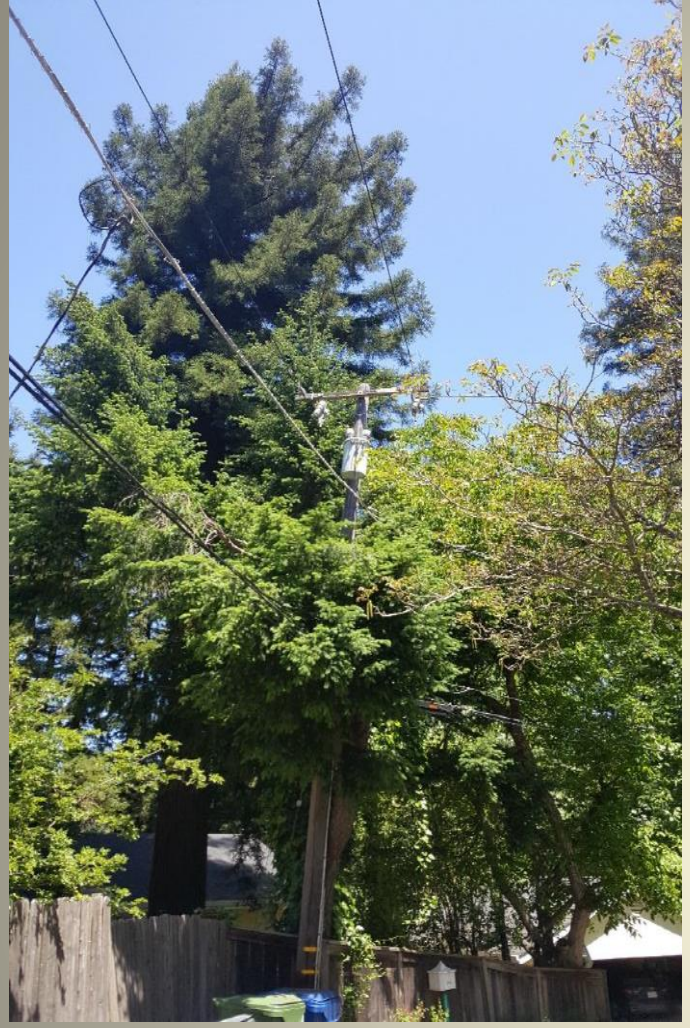
Diabetes prevalence info and other medical conditions that depend on refrigeration

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



Tier 3 High Wildfire Danger Area, Los Gatos, CA, Overgrown vegetation compromises safety and utility pole access
Photo by Prof. Catherine Sandoval, May 2019

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 ratemak**ing.

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 expresses concern about "resource diversion" to respond to reports of 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

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

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

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

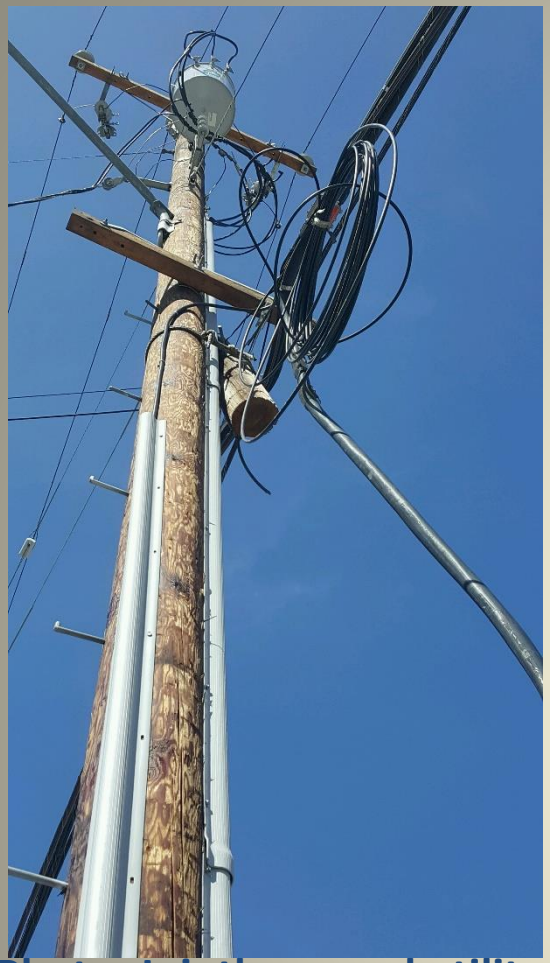


Photo: Jointly owned utility pole with "Peg" in communications space, blocking electric climbing space and violating CPUC GO 95 that limit days PEGs can remain on poles
Photo by Prof. Catherine Sandoval, March 2018

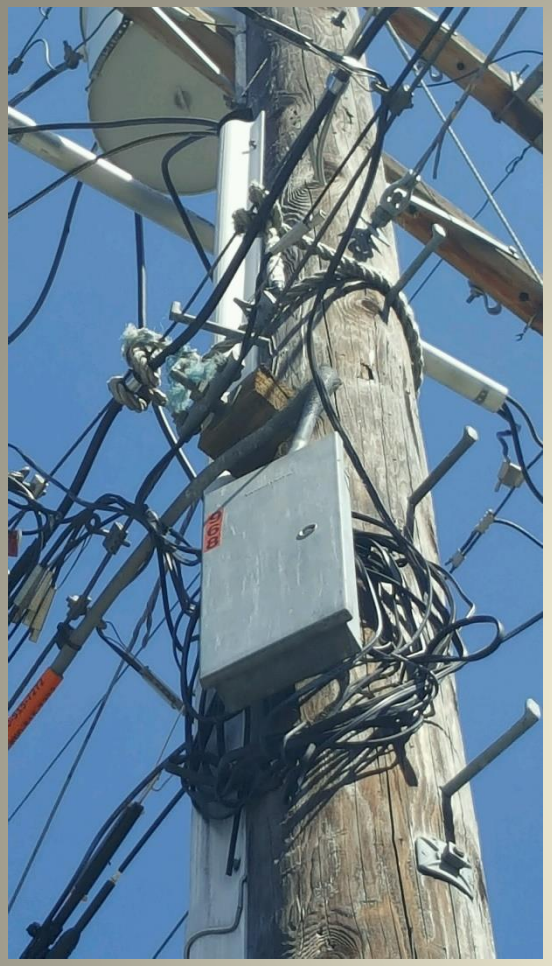
When a fire broke out in Lafayette, CA in October 2019 PG&E Troubleman reported "the lashing wire of a communication cable near a PG&E open wire secondary conductor was broken," https://www.sfchronicle.com/california-wildfires/article/PG-E-to-state-2-Lafayette-fires-linked-to-14568505.php

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



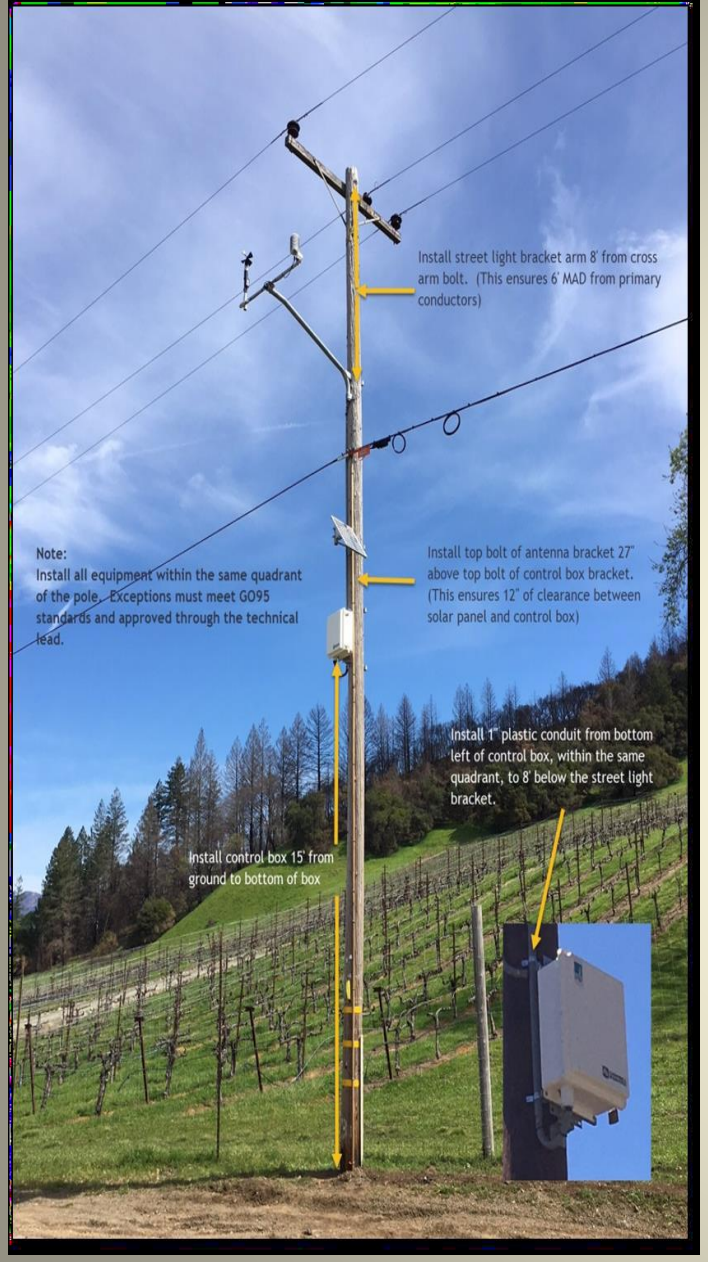
Jointly owned Pole with Equipment tied by Rope and Obstructed Climbing Space, Photo by Catherine Sandoval, March 2018

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

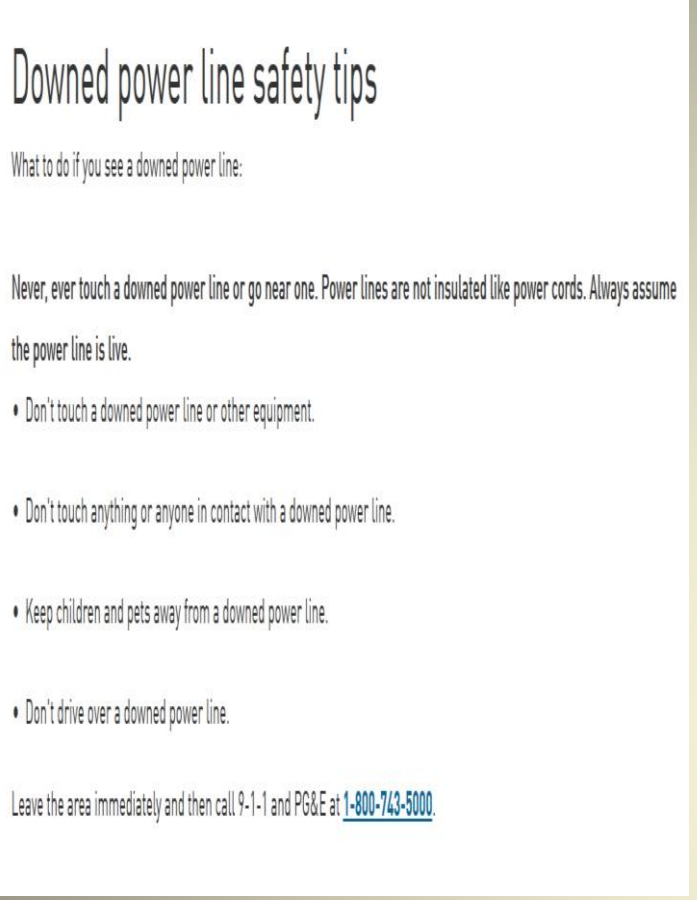
PG&E's 2020 Wildfire Safety Mitigation Proposes increased use of Cameras and weather monitoring equipment.

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



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 1-800-743-5000.

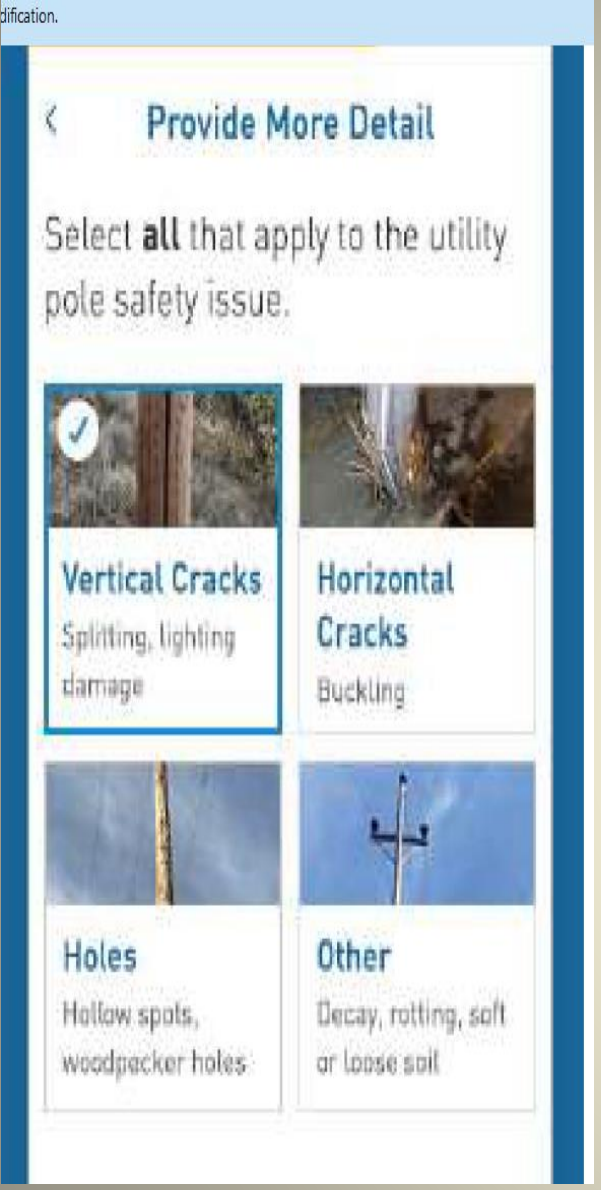
PG&E, https://www.pge.com/en_US/safety/report-emergency/downed-power-line.page

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 proposed app, types of hazards to report

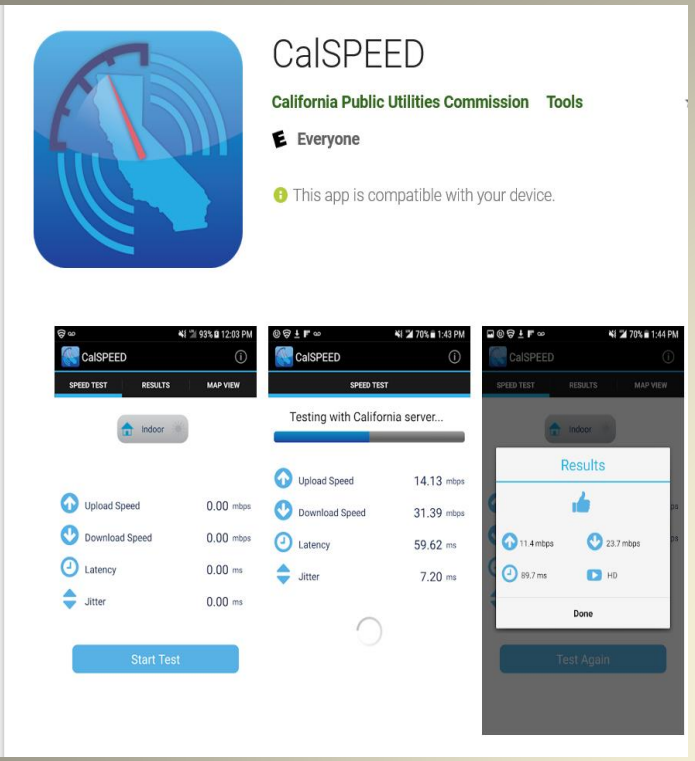
PG&E proposes to email customers in Tier 2 and 3 High Fire Threat areas to invite participation

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.

Apps Connect Crowed 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

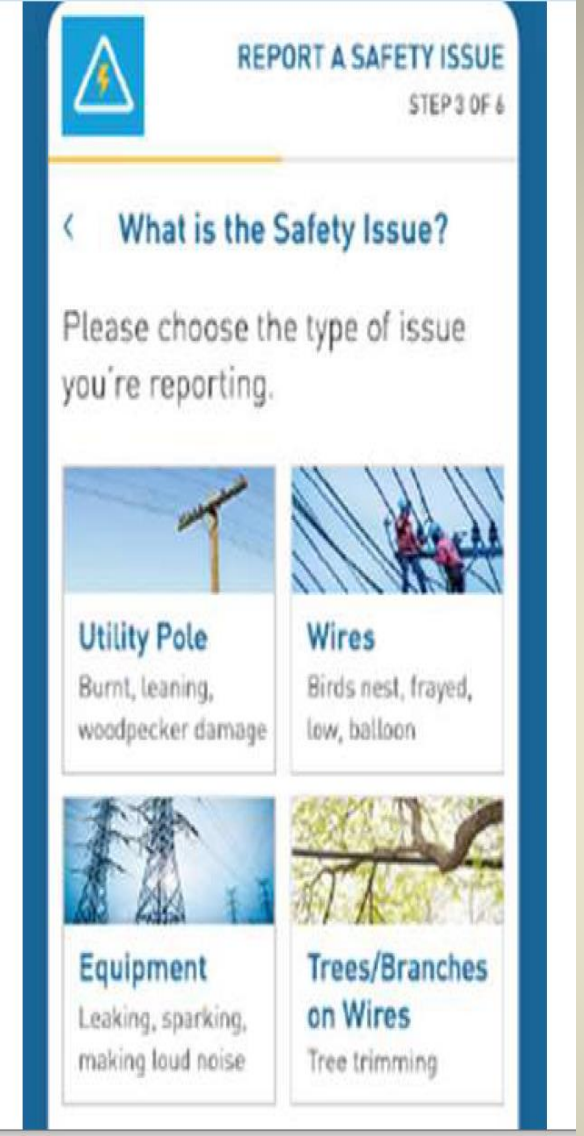
Click on the images below from your mobile device to install the SF311 Mobile App

ANDROID APP ON Google play Available on the App Store

The SF311 Official App has this logo in the stores!

311 SAN FRANCISCO AT YOUR SERVICE

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



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

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 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%2520000001701b6dd68caff1fbeffc3d0000#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

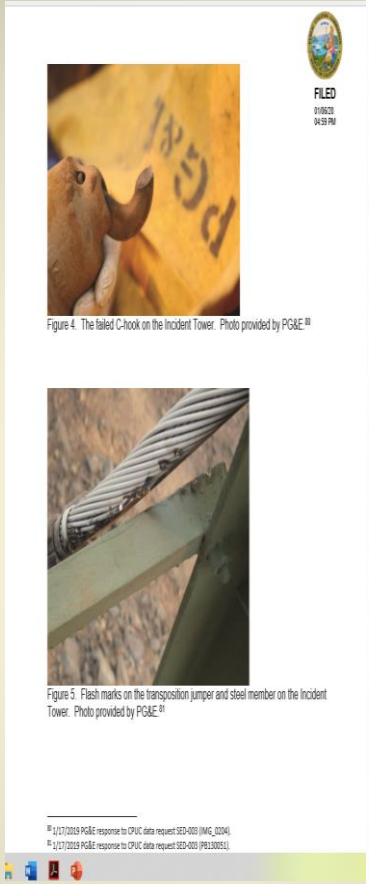
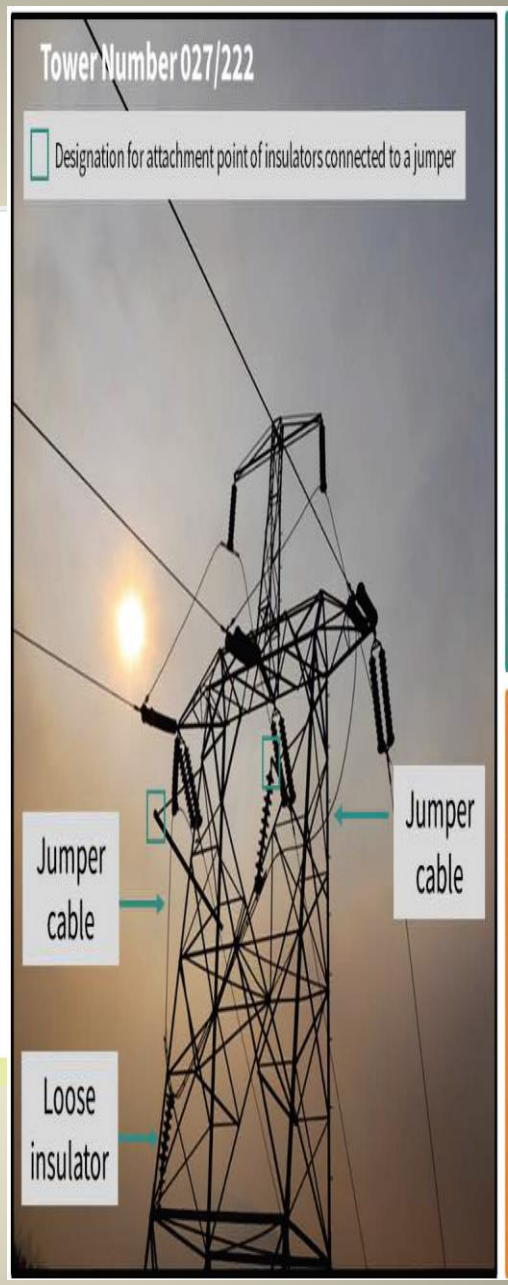

FILED

Figure 4. The failed C-hook on the Incident Tower. Photo provided by PG&E.[80]

Figure 5. Flash marks on the transposition jumper and steel member on the Incident Tower. Photo provided by PG&E.[81]

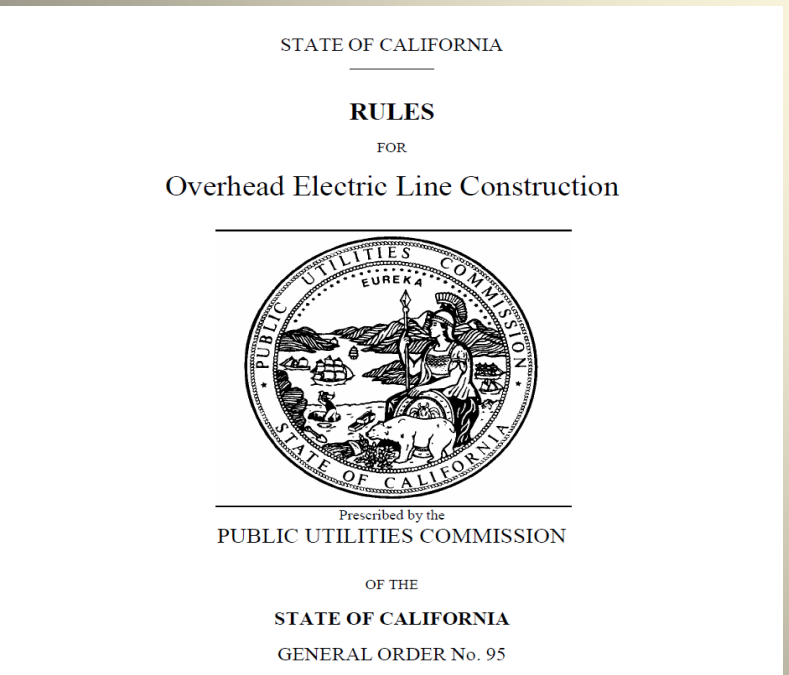
[80] 1/17/2019 PG&E response to CPUC data request SED-003 (IMG_0204).
[81] 1/17/2019 PG&E response to CPUC data request SED-003 (PB130051).



CPUC, Safety and Enforcement Division, Camp Fire Incident Investigation Report, Nov. 2019, http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M320/K909/320909806.PDF

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

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ATTACHMENT C | Attachment C: California Department of Technology Presentation Assessing PG&E Pilot Approach and Existing Open-source Mobile App Platforms

CA Dept of Technology Mobile App Review

Scott Gregory - State Chief Enterprise Technology Officer

Overview

1. *Review of items outlined for the mobile application deployment*
2. *Report on areas of potential concern*
3. *In production example of a similar application - how we did it*

Review of Mobile Application Proposal

Technical Specifications:

- Open Source - good choice, but proceed with caution and know what you are getting into
- GPS enabled devices to provide information from the field - must understand issues related to position accuracy and data acquisition
- Provide information within 30 days of receipt of photos - what are the implications
- Web based application deployment plans - items to consider

Open Source Software

Denoting software for which the original source code is made freely available and may be redistributed and modified.

Awareness and community is important

Marketing is important. Never underestimate the power of a solid marketing plan and branding strategy to gain support and buy-in

Strategically invest in open source communities and ecosystems. Some communities are more in keeping with your technology goals than others.

Get strong legal counsel. Without the right legal counsel, an open source program can end up placing undue risk on a business or government. Must strike a balance

Align with product strategy. An open source program should support organization business and technology strategy.

Formulate—and communicate—your end-user and developer community support strategies and guidelines. Understand what a well-run community looks like.

GPS Enabled Devices

GPS is great under certain environmental conditions

Locational integrity for data and accurate reporting of assets

PDOP (Potential Dissolution of Precision)- Why is it important?

Directionality in photo acquisition from the field - Azimuth and Heading

Multiple orientation options are a must - map, imagery and access to supporting information

Information Transparency

Organizations have to establish how, when and why they share information. What's the end goal?

Information sharing with stakeholders

Strong Policy - policy must be established to determine the rules of engagement when sharing data. Data ownership, data efficacy and standards are important

Established Metadata Standard - developing or using an industry recognized metadata standard ensure interoperability with allied systems and appropriate documentation of data

Privacy - CA Consumer Protection Act (Jan 2020). Organizations need to be aware of the implications for consumers, contributors and owners of data

Web based over Native App

Web based applications reach a broader audience than a strictly native app approach, but come with items of consideration

Web based applications

Web based applications, in most cases, require a internet connection

Web based app require some considerations:

Connected vs disconnected editing

Web Accessibility (WCAG 2.0 - 2.1)

Utility is typically dependent on connection speed

They are responsive in design typically - working with multiple form factors

Push notifications - possible with a modern practices (HTML 5 , push APIs, etc…)

Report Water Waste

California's response to water waste enforcement with a web app

California drought 2014-2017

Goal - report water wasters across the state

Challenge - build an application for mobile users to report issues, send photos and document violations

The Data - we have processed 20,000+ infractions

Enforcement - local water districts get involved

Thanks!

Contact:

Scott Gregory
CA Chief Enterprise Technology Officer
CA Dept of Technology
scott.gregory@state.ca.gov

ATTACHMENT D | SPD Presentation on Rulemaking Overview and Steps Ahead + Staff Conclusions and Recommendations on PG&E's Proposed Pilot Concept and Implementation Plan

PG&E Safety Reporting Mobile App Pilot Workshop 2

A.19-07-019

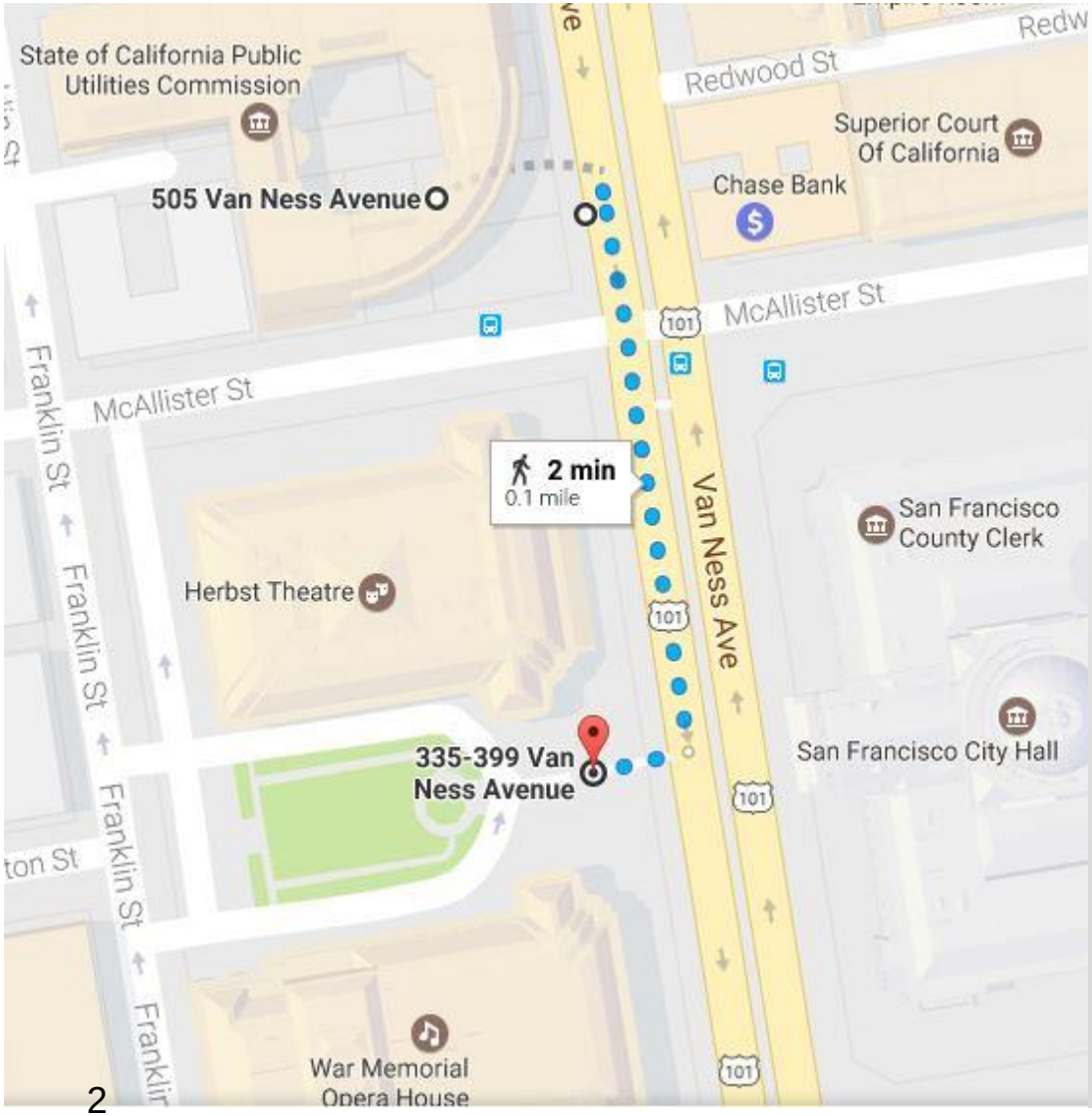
Jeremy Battis

Safety Advisory, CPUC Safety Policy Division

CPUC Auditorium | San Francisco

February 12, 2020

Safety and Emergency Information



- In the event of an emergency, please proceed calmly out the exits
- The Temporary Evacuation Meeting point is located in the public plaza area on Van Ness Avenue opposite City Hall and between the Herbst Theatre and War Memorial Building Opera Plaza

Agenda - Workshop 2

10:00 - 10:20 a.m. **Introduction, Safety Message, and Rulemaking Overview and Steps Ahead**
Jeremy Battis, SPD Safety Advisory, lead analyst for A.19-07-019

10:20 - 10:40 a.m. **PG&E Presentation of Proposed Mobile App Pilot Implementation Plan**
Matthew Plumber, PG&E Regulatory Affairs, Principal

10:40 - 11:00 a.m. **Go Big to Connect Public Information to Analysis and Action to Protect Public Safety**
Catherine Sandoval, Associate Professor, Santa Clara University School of Law

11:00 - 11:30 a.m. **Adequacy of the Technical Elements and Requested Deviations in the Proposed Mobile App Pilot**
Scott Gregory, State Chief Enterprise Technology Officer, California Department of Technology

11:30 - 11:35 a.m. **B R E A K – five minutes**

11:35 - 12:00 p.m. **SPD Staff Takeaways from PG&E Pilot Implementation Plan and Recommendations**
Jeremy Battis, SPD Safety Advisory, lead analyst for A.19-07-019

12:00 - 12:20 p.m. **Public Comments and Questions**
Audience Participation and Follow-up Q&A encouraged

12:20 - 12:30 p.m. **Closing Remarks**

12:30 p.m. **A D J O U R N**

Origin of the Rulemaking

I.19-06-015, issued June 27, 2019 in response to 2017 wildfires, initiates investigation to determine to what extent rule violations surrounding PG&E assets may have played a role in ignition

Commission Order dicta and Ordering Paragraph 13 direct PG&E to, within 30 days, file an application that seeks to develop and operate an open source, mobile app at shareholder expense to allow customer transmittal of geocoded publicly-viewable photos to a PG&E database

PG&E Initial Response

PG&E on July 29, 2019 filed Application A.19-07-019 proposing a limited trial concept to test the notion that the general public might aid in prevention efforts of new wildfires linked to problematic electric utility equipment

Concept hinges on transmittal of valid, non-emergency safety reports with photos from the public to the utility

The pilot's success would, in part, depend on the public's ability to competently identify PG&E assets, and discern irregularities and safety hazards

PG&E anticipates that pilot would address only above-ground publicly-visible assets such as poles and wires

PG&E Initial Response

PG&E's application further explains that the pilot's end product would address potential problems with utility infrastructure by reporting primarily on vegetation contact and equipment failure

PG&E details multiple pilot objective challenges ahead, and outlines a plan for moving forward

PG&E proposes a rulemaking procedure that puts the proposed pilot concept before the Commission for formal pre-approval by way of a Decision, which would also provide regularity clarity and new rules to support the pilot concept

Rulemaking Initial Steps

Pre-hearing Conference Notice and Call for Statements, issued by Assigned ALJ Regina DeAngelis on September 24, 2019

Parties Responded by Submitting ***PHC Statements***, on or before October 15, 2019

Assigned Commissioner Clifford Rechtschaffen on November 14, 2019, issued a ***Scoping Memo and Ruling*** to establish proceeding framework, key areas to be addressed, and a schedule to include public workshops

Rulemaking Schedule

Proceeding Milestone	Date
Prehearing Conference	Oct. 15, 2019
Workshop 1	Dec. 3, 2019
PG&E draft Pilot Implementation Plan due	Jan. 17, 2020
Workshop 2	Feb. 12, 2020
Comments on proposed PG&E Pilot Plan due	Feb. 21, 2020
Reply Comments due	March 6, 2020
PG&E Notice of Intent to file Final revised Pilot Implementation Plan due	March 13, 2020
PG&E revised Final Pilot Implementation Plan due *(elective step)*	March 20, 2020
Proposed Decision	2nd Quarter 2020

End First Staff Presentation

Context and Scale of PG&E Customer Reach – Safety-related Web Searches

- 55 percent of PG&E web traffic originates on a mobile device (source: pilot implementation plan, p. 8)
- Number of safety-related web searches on PG&E website averages well over 4 million per month in 2019
  (source: data request response, February 2020)

Month	2019	2018	2017	2016
Jan	4,787,730	3,863,449	4,436,646	
Feb	4,790,077	3,446,759	4,153,470	
Mar	4,636,000	3,917,370	3,621,891	
Apr	4,420,058	3,810,113	3,384,389	
May	4,300,172	3,879,772	3,221,109	2.97M
Jun	5,005,964	3,936,937	3,673,320	3.2M
Jul	4,885,120	4,262,948	3,586,091	3.2M
Aug	5,052,007	4,235,229	3,540,558	3.5M
Sep	5,367,513	3,871,543	3,549,839	
Oct	16,777,564	4,191,085	3,810,113	
Nov	5,930,150	3,698,772	3,312,914	3.0M
Dec	4,662,666	3,632,287	3,810,113	3.3M

***only partial data available for 2016*

Context and Scale of PG&E Customer Reach – Wildfire Threat Tiers 2 and 3 Counties, and PG&E Accounts Impacted by Households

- 450,000 families across 38 California counties

Residential Accounts Only | Simplified to Exclude Very Low Count Counties (fewer than 100 accounts)
38 of 58 California Counties Impacted

PG&E Customer Count by HFTD and County

SPD Analysis Date Jan. 24, 2020

Notes: Reflects Active Customer Accounts on Duel Fuel or Electric included ; Data Source is MASST(Teradata) and HFTD is CC&B

No.	ABC No.	Wildfire Threat District	County Name	Total
1	7	TIERS 2 & 3	EL DORADO	37,991
2	1	TIERS 2 & 3	ALAMEDA	30,127
3	15	TIERS 2 & 3	MARIN	29,945
4	36	TIERS 2 & 3	TUOLUMNE	25,404
5	32	TIERS 2 & 3	SONOMA	24,624
6	20	TIERS 2 & 3	NEVADA	24,452
7	28	TIERS 2 & 3	SANTA CRUZ	22,745
8	24	TIERS 2 & 3	SAN LUIS OBISPO	21,511
9	6	TIERS 2 & 3	CONTRA COSTA	20,031
10	29	TIERS 2 & 3	SHASTA	19,242
11	21	TIERS 2 & 3	PLACER	18,975
12	4	TIERS 2 & 3	CALAVERAS	18,544
13	17	TIERS 2 & 3	MENDOCINO	16,017
14	25	TIERS 2 & 3	SAN MATEO	15,372
15	12	TIERS 2 & 3	LAKE	13,814
16	18	TIERS 2 & 3	MONTEREY	13,266
17	14	TIERS 2 & 3	MADERA	12,894
18	3	TIERS 2 & 3	BUTTE	12,009
19	27	TIERS 2 & 3	SANTA CLARA	11,902
20	2	TIERS 2 & 3	AMADOR	10,568
21	16	TIERS 2 & 3	MARIPOSA	8,108
22	8	TIERS 2 & 3	FRESNO	7,571
23	33	TIERS 2 & 3	TEHAMA	6,261
24	10	TIERS 2 & 3	HUMBOLDT	5,550
25	19	TIERS 2 & 3	NAPA	5,125
26	38	TIERS 2 & 3	YUBA	3,951
27	22	TIERS 2 & 3	PLUMAS	3,804
28	31	TIERS 2 & 3	SOLANO	2,618
29	26	TIERS 2 & 3	SANTA BARBARA	2,241
30	34	TIERS 2 & 3	TRINITY	1,456
31	23	TIERS 2 & 3	SAN BENITO	1,174
32	30	TIERS 2 & 3	SIERRA	825
33	11	TIERS 2 & 3	KERN	677
34	35	TIERS 2 & 3	TULARE	563
35	13	TIERS 2 & 3	LASSEN	442
36	9	TIERS 2 & 3	GLENN	205
37	5	TIERS 2 & 3	COLUSA	149
38	37	TIERS 2 & 3	YOLO	119
		Grand Total		450,261

PG&E Pilot Implementation Plan

Outlines mobile app participant recruitment plan that includes email invitations to up to 300,000 customer accounts within Wildfire Threat Tiers 2 and 3, spanning some 38 California counties

Explains that participants from this pool may be contacted in “batches” so as to ensure a manageable workload and optimal sample size

Anticipates that after self-selection attrition, the Pilot should yield 384 unique submittals, a statistically-significant sample number

PG&E Pilot Implementation Plan

Proposes pilot success and evaluation criteria that weigh monetary costs against automation benefit, and the yield of valid, useful, non-duplicative reports against the potential nuisance of sorting through volumes of low-value reports

Proposes Pilot success criteria that, absent 384 unique reports from 384 unique individuals, would point to insufficient public interest to justify pilot continuation

Proposes evaluation criteria that call for the Pilot effort to offset one-to-one the opportunity costs of diverting resources from other existing PG&E safety programs

PG&E Pilot Implementation Plan

Commits to a Pilot test period of no less than six months or until 384 unique reports are received

Commits to including one fire season, with a Pilot test period not to exceed twelve months

Commits to conferring with CPUC staff at various hypothetical progress intervals

Estimates that development and testing efforts would have the Pilot launch within six months from the date the Commission issues a Final Decision

Deviations Sought by PG&E within Pilot Implementation Plan

- No open source code (pp. 2 and 7)
- Web-based platform rather than a downloadable smart phone app (pp. 2 and 6)
- Report data and photos not publicly-accessible in pilot phase (Implementation Plan, p. 26; Cover letter, p. 3)

SPD Staff Recommendations

Modify planned duration of Pilot program to a minimum of one year

Consider whether timing of Pilot launch would be an important factor in its success

- Better to launch upon conclusion of a Wildfire season in order to allow for rollout and learning curve benefit?
  - *Note: Trajectory of rulemaking and project have the pilot potentially debuting in October 2020*

SPD Staff Recommendations

Modify proposed Pilot success evaluation criteria to make it more typical of and benefitting a pilot program, and to offer a metric that represents an obtainable goal

If PG&E undertakes the Pilot, the utility should ensure the project is designed and resourced to enable it to achieve success

SPD Staff Conclusions

The absence of an existing PG&E Mobile App is conspicuous and undesirable, and the Pilot should be conceived to inform a solution and address this gap

Limited industry benchmarking strongly suggests that mobile app success and consumer uptake is correlated with a platform performing more than one function

SPD Staff Recommendations

Therefore, the PG&E Mobile App should include additional valuable safety information-sharing capabilities to keep customers informed in an era of heightened wildfire threats and commonplace planned power shutoffs

Accordingly, the PG&E Pilot should be scoped to offer real-time PSPS alerts and to enable customers to report a power outage

End Second Staff Presentation

SPD Staff Questions

For the Pilot, PG&E proposes to not make reports and photos publicly accessible.

Please explain why PG&E is disregarding the Commission directive

(Implementation Plan, p. 26; Cover letter, p. 3)

(Order Instituting Investigation and Order to Show Cause, p. 18; OP 13, p. 21)

SPD Staff Questions

What was the result of PG&E consultation and discussions with Cal Fire?

(Scoping Memo directive, p. 7)

SPD Staff Questions

Please explain how 384 participants is the appropriate number that ensures a statistically-significant sample. Does this 384 number translate to a 95 percent confidence level? Would a smaller number of submittals allow sufficient evaluation of the functionality of the mobile app Pilot?

(Implementation Plan, pp. 13, 36-38)

SPD Staff Questions

Why is it proposed that a report with a deficient photo would result in a rejected report, but a similar report without a photo would be processed?

(Implementation Plan, p. 23)

SPD Staff Questions

PG&E, in proposing Pilot success evaluation criteria, predicts that the effort will syphon limited resources away from other safety programs. PG&E therefore sets an expectation for success that the Pilot deliver benefits that justify the opportunity cost of deferred related efforts. This would appear to be an argument for a one-to-one tradeoff, or cost-equal-benefit expectation.

Is such success evaluation criteria appropriate for a pilot project?

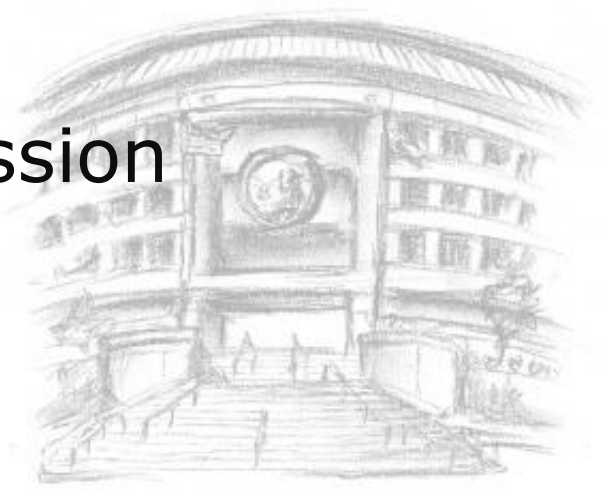
(Implementation Plan, pp. 10, 12-13)

SPD Staff Questions

Comments presented at the first workshop suggested additional functionality, such as PSPS information be added to the proposed mobile app to increase user interest and acceptance

Why has PG&E not proposed additional functionality to increase user interest?

How to Contact Us



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F I N A L P A G E

End of Staff Report