

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



October 14, 2019

Mr. William Johnson
Chief Executive Officer
Pacific Gas and Electric Company
77 Beale Street
San Francisco, CA 94105

Dear Mr. Johnson:

As you know, during the week of October 7, 2019, Pacific Gas and Electric Company (PG&E) initiated the largest Public Safety Power Shut-off (PSPS) in the history of California. This deliberate action resulted in power being shut off to more than 700,000 PG&E customers, which is estimated to have directly impacted more than 2 million people. The scope, scale, complexity and overall impact to people's lives, businesses and the economy of this action cannot be understated. Loss of power is not a mere inconvenience—it endangers lives and property, especially those individuals who are reliant on power for medical reasons, and causes major disruptions to businesses, medical facilities, schools, banks, gas stations, transportation networks and other critical infrastructure, and strains state and local emergency and public safety personnel as they work to ensure public safety. While utilities have statutory authority to shut off power as a measure of last resort to assure safety, the California Public Utilities Commission (CPUC) takes these events very seriously and expects PG&E, as well as all other utilities, to initiate PSPS only as a last resort and, if absolutely necessary, based on actual and substantiated existing conditions, and to execute PSPS actions in a way that takes every measure to maximize public safety and minimize the impacts and disruption to the public.

Since May 2019, PG&E had provided public notifications about the potential of a PSPS event. Several state and local agencies and non-governmental organizations had worked with PG&E to provide multiple recommendations ranging from better coordination and communications to operational protocols all to help minimize the impacts of a PSPS event ahead of time. Despite the effort to prepare the public for a PSPS event, this event of the week of October 7, 2019, demonstrated PG&E itself did not incorporate many of the recommendations from state agencies and was not fully prepared to manage a large-scale PSPS event of such magnitude. Throughout the event, PG&E had multiple issues with communication, coordination, and event and resource management.

Failures in execution, combined with the magnitude of this PSPS event, created an unacceptable situation that should never be repeated. The CPUC acknowledges PG&E staff cooperated with state agencies, was transparent regarding issues as they arose and there were many individuals at PG&E who worked hard to overcome challenges. This type of collaboration across organization boundaries is imperative in emergency situations. State agencies will also perform after-action reviews and identify action items to ensure continuous improvement in these types of events. However, the purpose of this letter is to focus on areas where PG&E fell short and identify immediate steps to be taken towards improvement.

The CPUC and other state agencies, including the California Governor's Office of Emergency Services (Cal OES) and the California Department of Forestry and Fire Protection (CAL FIRE) have been working with PG&E and the other state investor-owned utilities (IOUs) to provide expertise and recommendations on managing large-scale events such as this to ensure that the utility was as prepared as possible to execute PSPS programs. PG&E assured the State that it was prepared for PSPS event execution. However, the event that took place the week of October 7, 2019, left Californians scrambling for information.

A major failure was PG&E's public website crashing and becoming unusable during the most critical times in their event. A cornerstone of the PG&E PPS public information effort was to drive the public and government agencies to its website for all information, including maps of outages and other important data. This site was highlighted to provide real-time, life-saving information. Unfortunately, the website crashed within the first 24 hours and company representatives struggled to provide necessary information to their customers, the public, and frontline safety officials with affected state, county and tribal governments.

It is critical that PG&E, along with all the other utilities in the state, learn from this event and take steps now to ensure mistakes and operational gaps are not repeated.

Therefore, the CPUC directs PG&E to perform an after-action review and take immediate corrective actions that include steps outlined below. The CPUC directs PG&E to file its response by close of business October 17, 2019, and file weekly updates on corrective actions until all concerns below have been addressed.

The CPUC shall hold an emergency meeting on October 18, 2019, in San Francisco, California and directs, at a minimum, the following individuals to be present and available at this meeting:

- Nora Mead Brownell, Chair of the Board of PG&E Corporation
- Jeffrey Bleich, Chair of the Board of PG&E Company
- William Johnson, Chief Executive Officer, PG&E Corporation
- Andrew Vesey, Chief Executive Officer, PG&E Company
- Michael Lewis, Senior Vice President, Electric Operations, PG&E Company

- Sumeet Singh, Vice President, Asset & Risk Management, Community Wildfire Safety Program, PG&E Company
- Karen Austin, Chief Information Office, PG&E Company
- Aaron Johnson, Vice President of Customer Energy Solutions, PG&E Company

Below are new, and renewed, requirements of PG&E based on observations by CPUC staff and feedback from relevant public safety agencies. Many items listed in this letter, particularly as relate to coordination with local governments, have been previously addressed in CPUC decision D1905042 and ESRB-8 and PG&E is expected to comply with those requirements. The CPUC and other state agencies may direct additional requirements as reviews and analysis continue.

1. Scaling of business operations

PG&E business operations appear to have not been adequately prepared or scaled for the increase in customers contacting PG&E during PSPS events. This resulted in website crashes and extraordinarily long call-waiting times in call centers during this particular event and in other ways not fully understood at this date. In order to mitigate the risk of these types of issues occurring in the future, PG&E shall at a minimum:

- Identify the maximum customer outage that could occur during a PSPS, and the commensurate bandwidth requirements for both web and call services that must be available at all times.
- Develop protocols to immediately enlist surge capacity and/or supplemental resources to address shortfalls in real time. Establish specific response-time goals/metrics and triggers to ensure resource availability to meet these goals.
- Perform a risk assessment of business operations and document the utility's capabilities and gaps for handling high traffic to websites, increased call center volume, and potential impacts on utility communications from associated interruption of telecommunications networks.
- Ensure website capabilities that are critical for PSPS information dissemination function in a cloud environment and are thoroughly tested in accordance with industry best practices.
- Perform performance and stress testing of websites, customer portals and underlying infrastructure, develop procedures to identify and manage cyber-attacks (e.g. Denial of Service) that are launched concurrently with a PSPS event, and develop back-up sites as a contingency in case main website goes down.
- Establish a partnership with the California State Threat Assessment Center and the California Cyber Security Integration Center to receive threat information to PG&E networks and to receive State technical assistance when necessary during high profile PSPS events.

- Establish solutions for handling increased volumes of calls to the call centers, including setting specific response-time goals and ensuring resource availability to meet those goals. To accomplish this, PG&E and the other state IOUs shall increase the workforce in this area so that there are adequate resources to manage this highly critical function.

2. Coordination with counties and tribal governments

Several concerns have been identified related to coordination with local governments, especially county emergency management departments. They include, but are not limited to, general communication processes and procedures, accuracy and timeliness of providing relevant information, establishing two-way communication channels that enable the utilities to address local concerns, identifying medical baseline customers and critical facilities impacted by the PSPS event, and sharing this information with first responders. PG&E is directed to take immediate corrective actions that, at a minimum, include:

- Collecting feedback from local governments (cities and counties) impacted by PSPS events that took place the week of October 7, 2019, and identifying specific actions to be taken to address such feedback.
- Identify resources (Emergency Operations Center liaisons) that can be embedded 24/7 in County Emergency Operations Centers (EOCs) during events. The EOC liaisons shall be trained in emergency response, in accordance with Standardized Emergency Management System (SEMS) and have working knowledge of utility operations and business processes.
- Develop and implement processes that will ensure that County EOC liaisons will have the latest PSPS event information during PSPS events and are enabled and empowered to resolve local issues as they arise.
- Establish a more effective communication structure with county and tribal government emergency management personnel. This communications structure shall be separate and unique from general updates to local governments and other stakeholders to allow for emergency personnel to receive the support and information required to properly respond.
- Phone calls must be manageable and allow for two-way dialogue with each county and tribal government emergency personnel. The CPUC recommends holding calls individually with counties when possible, or at a minimum considering grouping counties in accordance with PG&E identified geographic regions (1-9) or developing some other format. For example, attempting to take questions with hundreds of people on a conference phone call is not feasible.
- Develop processes and procedures for sharing information of medical baseline customers that can be impacted by a specific PSPS event. Per CPUC Executive Director directive issued on October 8, 2019, the utilities are expected to share medical baseline information with counties and tribal governments, if requested, without a

memorandum of understanding or non-disclosure agreement during PSPS events. Also, utilities must ensure that the information can be shared with county and tribal government emergency response personnel in a confidential manner that limits access to include only intended recipients of the information.

- Develop and validate the list of critical facilities by coordinating with counties, tribal governments and Cal OES ahead of the events.
- Identify impacts on major transportation systems, including tunnels and railroad systems. PG&E shall coordinate with the California Department of Transportation (Cal TRANS) and the appropriate railroad and rail transit entities ahead of events to identify major transportation infrastructure that needs to be monitored during PSPS events.
- Identify critical fuel supply needs and develop advance plans for coordination with fuel suppliers and refineries to ensure continuity of fuel supplies.
- Develop processes and procedures for sharing information on critical facilities with counties and local governments during events. This must include a solution for sharing information with counties and local governments even if there is no existing memorandum of understanding or non-disclosure agreement.
- Coordinate advance planning with county and tribal governments to identify locations for PSPS-specific community resource centers. These locations should be identified in a collaborative manner with local emergency response personnel and include agreement that the locations are appropriate to meet local requirements and needs. The list of possible locations for community resource centers should be known to local governments ahead of events and, during events, the coordination should be focused on which specific location to open. PG&E shall also work with counties and local governments to reach understanding on standards for operation (e.g., services available, operational hours).
- Plan town hall style meetings or in-person public information dissemination gatherings to report back to the impacted communities following the PSPS event.

3. Accuracy and availability of maps

PG&E continues to fail at making available maps with clear boundaries of PSPS impact in a timely manner. These maps need to be provided to Cal OES, county and tribal governments and members of the public at various stages of PSPS protocol activation. At a minimum, PG&E shall:

- Work with Cal OES to develop better processes for sharing maps, including working on following a model that includes direct integration between respective GIS systems. Cal OES has worked with utilities, including PG&E, to ensure maps with planned and actual PSPS impacts are provided in a timely manner. During the most recent PSPS event, PG&E was consistently falling behind on providing maps that matched its latest estimates of PSPS impacts.

- Establish processes and systems for distributing maps with boundaries to impacted counties and tribal governments that correspond to the latest PSPS impact information being provided.
- Develop dynamic maps that can be used for customers and members of the public to look up their specific address and obtain information about the PSPS event (potential for de-energization, status of de-energization, restoration estimation). These mapping solutions also need to be performance and stress tested to ensure they will be available during the most critical times (i.e., high volume web traffic).
- Develop processes and procedures for back-up mapping solutions in case of GIS failure (e.g., partnering with additional industry providers of maps and having the ability to promptly create maps with PSPS boundaries and make publicly available.)
- Develop capabilities to make maps available beyond the PG&E website, such as providing maps to media outlets and on social media and alternative platforms.

4. Mobilizing, organizing, and decision-making for widespread emergency events

PG&E must follow Standardized Emergency Management System (SEMS) in emergencies and PSPS events to ensure consistency among emergency management and public safety agencies. PG&E must ensure that its personnel involved in PSPS response in Emergency Operations Centers and its liaisons to counties and tribal government emergency personnel are trained in SEMS. If PG&E requires assistance in SEMS training, PG&E shall communicate training requirement needs to Cal OES and the CPUC.

PG&E needs to enhance visibility into PSPS decision-making process. At a minimum, PG&E shall:

- Develop a process for providing enhanced transparency and visibility of PSPS decision-making process during events, including the factors that PG&E is taking into account as it considers de-energizing lines.
- Document the utility's decision-making process for PSPS events, including identifying and documenting the authorities of the Senior Officer in Charge, or equivalent position, and how all elements of the utility emergency operation are clearly aligned under the command of this position.
- Identify and document all executives with the title of Vice President or equivalent, and above, with responsibilities in PSPS decision-making.
- Identify and document all board members, and board committees, with oversight of PSPS decision-making.
- Describe all ways in which the utility has used monetary and other incentives to ensure that executives make PSPS decisions that protect life and safety.

5. Restoration and mutual assistance

PG&E must take all possible measures to accelerate restoration from de-energization during PSPS events. Per Commission Decision 00-05-002, after major storms, utilities must restore service in less than 12 hours on average. At a minimum, this should be the goal for utility-caused outages, such as a PSPS event. PG&E shall also request resources through mutual assistance processes early in an event. In instances PG&E believes it can perform restoration with internal resources, it shall evaluate if it can perform the work faster with the support from mutual assistance and request mutual assistance resources if it can accelerate restoration time. PG&E must also take into account the possibility of outages and fires unrelated to PSPS and the need to perform restoration work in response to those events as well.

PG&E must take all possible measures to provide accurate restoration estimates to emergency personnel and the public at large. PG&E must also develop processes and procedures to share real time restoration numbers with counties and tribal governments.

6. Consultants and resources on call

PG&E must prepare for situations where unexpected issues or events (e.g., wildfire, earthquake, cyber-attack etc.) occur concurrently with a PSPS event. It is not possible to anticipate every possible scenario and/or issue that can arise which could compound a PSPS event. Nevertheless, PG&E must take steps to have resources of various capabilities available in order to scale a response and assist with problem solving. This could, for example, involve standing contracts with a range of technical experts and general consultants who are available to step-in and manage issue resolution. PG&E shall develop a list of existing and possible future agreements for on-call resources that can be called upon in case of an emergency.

7. Steps to minimize scope of future PSPS events

The CPUC acknowledges that due to the size of PG&E's service territory, the design of its transmission and distribution network, and the lack of granularity of its forecasting ability, PG&E cannot activate PSPS events as strategically as other California utilities. However, PG&E must enhance efforts to minimize the size of future events. Over the coming weeks the CPUC will direct PG&E to better prioritize its fire hardening and wildfire mitigation work to reduce the impacts of PSPS. PG&E shall provide additional information to the Commission, including:

- Overview of risk-based models PG&E has employed for prioritizing the hardening of infrastructure. As part of this description, identify factors that comprise that model and the weight ascribed to it, and also describe any other feature of this model.

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- Summary of hardening priority levels ascribed to infrastructure that was shut off in PSPS and how prior hardening efforts could have been adjusted to minimize the scope of this PSPS event.

In the immediate term, PG&E should consider an alternative mechanisms of reducing scope of PSPS events, particularly by prioritizing risk-deduction measures for distribution and transmission lines that serve larger populations and critical infrastructure.

The CPUC, and State agencies in California, continue to make public safety their top priority. As a part of that, PG&E provides an essential service to Californians and it is essential that it is able to operate and perform effectively before, during and after emergencies.

If PG&E requires additional assistance from the State in order to execute this critical mission, PG&E needs to communicate what resources it needs and the CPUC will work with our State agency partners to take appropriate steps.

Sincerely,



Marybel Batjer
President

cc: The Honorable Gavin Newsom
Governor of the State of California

Mark Ghilarducci, Director
California Governor's Office of Emergency Services

Thomas Porter, Director
California Department of Forestry and Fire Protection (CAL FIRE)

Amy Tong, Director
California Department of Technology
