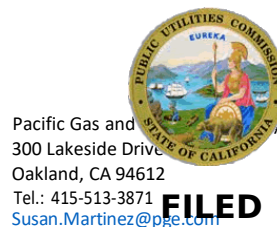




Susan C. Martinez
Director of Liaison,
Regulatory Operations
and Engagement



08/23/24

04:59 PM

R1812005

August 23, 2024

Leslie Palmer
Director, Safety and Enforcement Division
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA, 94102

Dear Mr. Palmer:

As required by Resolution ESRB-8 and in accordance with Ordering Paragraph 1 of California Public Utilities Commission (CPUC) Decision (D.) 19-05-042, Pacific Gas and Electric Company (PG&E) respectfully submits a compliance report for the proactive de-energization that was initiated on July 20, 2024, and fully restored for those who could receive power on July 21, 2024. This report has been verified by a PG&E officer in accordance with Rule 1.11 of the Commission's Rules of Practice and Procedure.

If you have any questions, please do not hesitate to call.

Sincerely,

Susan C. Martinez
Director of Liaison, Regulatory

Operations and Engagement

Enclosures

cc: Anthony Noll, SED
ESRB_ComplianceFilings@cpuc.ca.gov
EnergyDivisionCentralFiles@cpuc.ca.gov

**Pacific Gas and Electric Company
Public Safety Power Shutoff (PSPS) Report to the CPUC
July 20 – 21, 2024 De-energization**

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PG&E Public Safety Power Shutoff (PSPS) Report to the CPUC

July 20 – 21, 2024 De-energization Event

Section 1 – Summary and Overview

Section 1.1 - Brief description of the PSPS event starting from the time when the utility's Emergency Operation Center is activated until service to all customers have been restored.
(D.21-06-014, page 286, SED Additional Information.)

Response:

High winds can cause tree branches and debris to contact energized electric lines and potentially damage our equipment and cause a wildfire. As a result, we may need to turn off power during severe weather to help prevent wildfires. This is called a Public Safety Power Shutoff (PSPS). PG&E will not take any chances with customer safety. For the safety of our customers and communities, PSPS continues to be a necessary tool as a last resort. We know that turning off the power disrupts lives, and do not take this decision lightly.

On July 18, 2024, PG&E's Meteorology Team identified a potential fire weather event in forecast models and notified the acting Emergency Operations Center (EOC) Commander. We contacted federal agencies, including the National Weather Service (NWS) and North Geographic Area Coordination Center (GACC) to alert them of the potential event and learn whether fire weather warnings or watches would be issued. Neither NWS nor GACC issued Red Flag Warnings (RFW) or Fire Weather Watches, however, NWS issued a "fire weather zone forecast." Due to conflicting reports from federal agencies and in the interest of public safety, PG&E internally aligned to activate our EOC on July 18 at 18:00 PDT, which is why we were unable to issue Priority Notifications 72-48 hours in advance of the forecasted de-energization time. We began notifying Public Safety Partners immediately following the EOC activation, and as soon as it became operationally feasible in accordance with PSPS guidelines,¹ at 21:45 PDT.

On Friday, July 19, and Saturday, July 20, we further refined the PSPS scope based on updated meteorological forecasts, notifying Public Safety Partners and customers in the areas anticipated to be impacted, readied the grid, and prepared customer support resources.

We closely monitored weather conditions across eight Time Places (TPs)², as shown in Figure 1, and ultimately initiated PSPS in two TPs due to unfavorable weather conditions. During this PSPS, we de-energized 212 customers³ across three counties.

On July 20, at 14:37 PDT, PG&E began de-energizing its assets and customers to mitigate catastrophic wildfire risk across portions of the Altamont/Patterson Pass area. Wind gusts near 40 mph were recorded during the PSPS. Figure 2 shows the fire spread simulation of what a wildfire in this area might have impacted including the damage it could potentially cause had a PSPS had not been initiated.

¹ D.19-05-042, D.21-06-034.

² A Time-Place (TP) is a portion of the PG&E grid that is electrically and geographically coherent and is forecast to experience consistent timing for severe fire weather. Time-Places are identified for each PSPS and receive consistent treatment for notifications and de-energization. Once actual weather conditions occur, Weather "All-Clear" and service restoration times may vary due to actual weather conditions within a TP.

³ Customers refers to active service points (meters).

On July 20, at 19:30 PDT, the first Weather “All-Clear” was issued the for All-Clear zones in TP 5 with the remaining All-Clears being declared on July 20, at 20:40 PDT once winds subsided.

Due to our mitigation actions and close weather monitoring, PG&E avoided the de-energization of 5,029 customers in the final scope through the use of sectionalization devices and scoping improvements. PG&E notified those customers who required de-energization and contacted more than 163 community representatives to ensure that communities could prepare before the PSPS.

Due to the changing scope and impacted counties declining CRCs (Community Resource Centers), PG&E did not open CRCs for this PSPS. Additionally, PG&E partnered with local organizations to provide support for more than 150 customers in need. No hotel stays were provided during this PSPS.

Customers were re-energized safely and as quickly as possible; within 24 hours of the wind event, 100% of customers’ power had been restored. The average restoration time for this PSPS was 1.8 hours.

Figure 1: PSPS Timeline

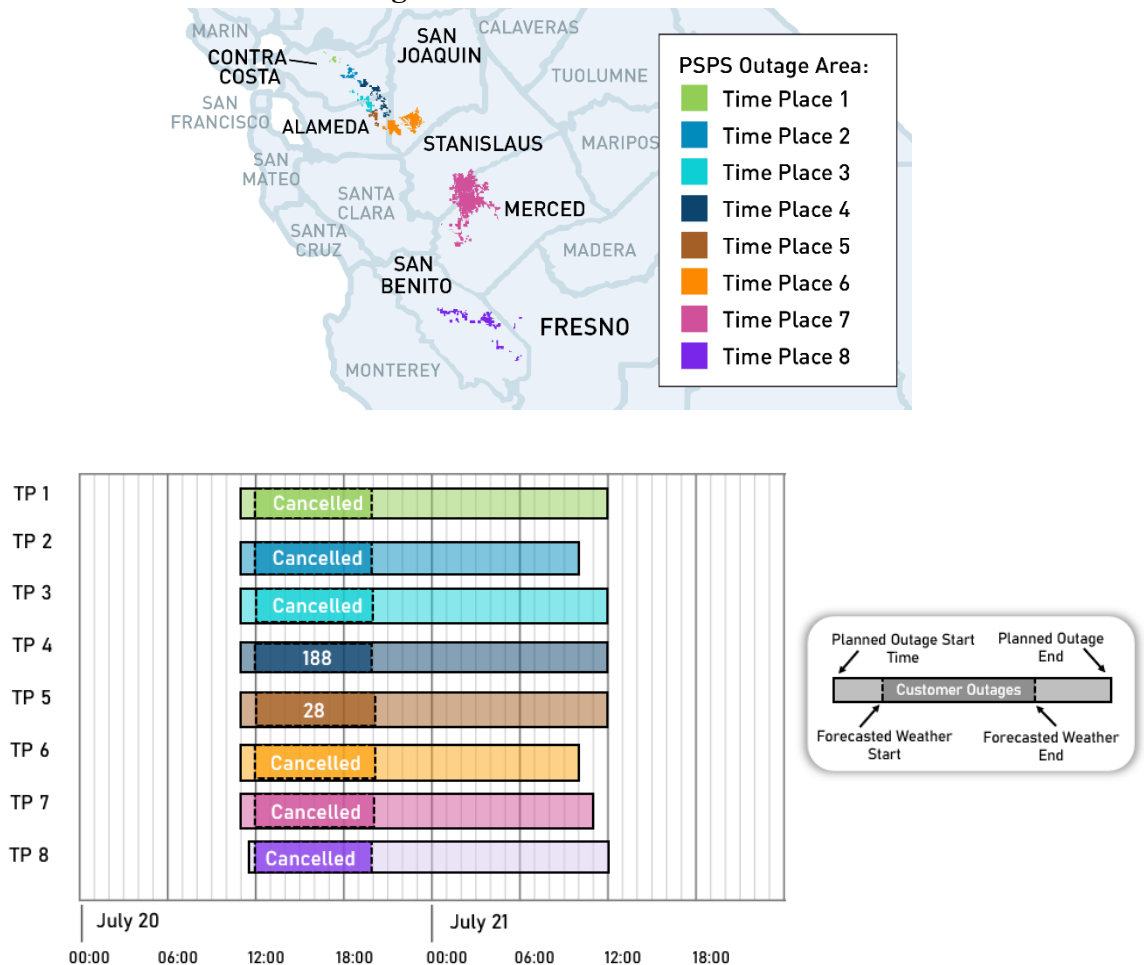
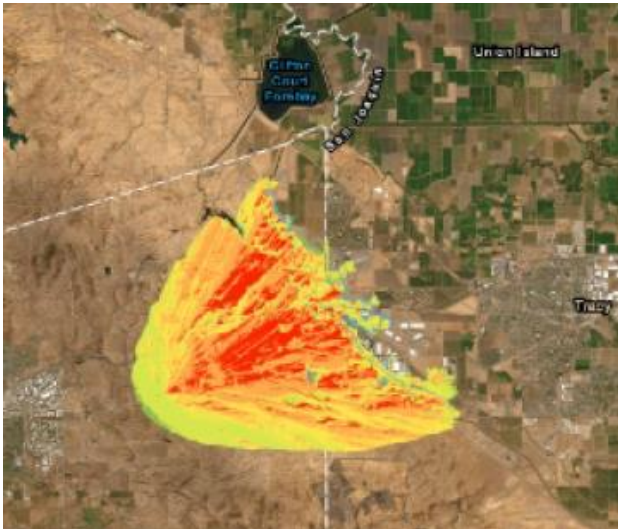


Figure 2: Fire Spread Simulation

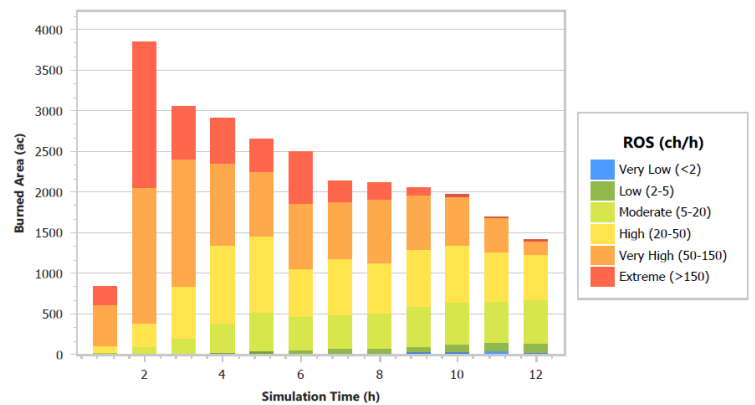
Fire Spread



Damage to Equipment



Rate of Spread



Impact Analysis

Size (ac)	27,221.37
Initial Attack Assessment	4 - Very High
No. of Buildings	677
Total Population	1,038
No. of Places	8

Section 1.2 - A table including the maximum numbers of customers notified and actually de-energized; number of counties de-energized; number of Tribes de-energized; number of Medical Baseline customers de-energized; number of transmission and distribution circuits de-energized; damage/hazard count; number of critical facilities and infrastructure de-energized. Hazards are conditions discovered during restoration patrolling or operations that might have caused damages or posed an electrical arcing or ignition risk had PSPS not been executed (D.21-06-034, Appendix A, page A15, SED Additional Information.)

Response:

Table 1 identifies the maximum number of customers notified and de-energized; number of Tribes de-energized; number of counties de-energized; number of Medical Baseline (MBL) program customers de-energized; number of transmission and distribution circuits de-energized; damage/hazard count; and number of critical facilities and infrastructure (CFI) de-energized.

Table 1: Customers Notified and De-energized⁴

Total Customers			MBL Customers	Counties	Tribes	Circuits			Hazard Count	CFI De-energized
Notified	De-energized	Cancelled	De-energized	De-energized	De-energized	Transmission De-energized	Unique Distribution Circuits in Any Version of Scope	Distribution Circuits De-energized		
15,766 ⁵	212 ⁶	15,555	9	3	0	3	27	4	1	25

Section 1.3 - A PDF map depicting the de-energized area(s) (SED Additional Information.)

Response:

During the July 20 – 21, 2024 PSPS, 212 customers were de-energized in two TPs. The final de-energization footprint is shown in Figure 3.

Figure 3: De-energization Footprint Map



⁴ The information, times, and figures referenced in this report are based on the best available information available at the time of this report's submission. The information, times, and figures herein are subject to revision based on further analysis and validation.

⁵ Of the 15,766 customer notifications sent to customers, all customers received Cancel notifications if they were removed from scope. However, one transmission-level customer was not deenergized despite their inclusion in the final scope. See Section 5.6 for details.

⁶ Of the 212 customers de-energized, two customers did not receive any notifications before de-energization, due to no valid contact information. For further details, please refer to Section 5.5.

Section 2 – Decision Making Process

Section 2.1 - A table showing all factors considered in the decision to shut off power for each circuit de-energized, including sustained and gust wind speeds, temperature, humidity, and moisture in the vicinity of the de-energized circuits (*Resolution ESRB-8, page 3, SED Additional Information.*)

Response:

See Appendix A for a list of factors considered in the decision to de-energize each of the circuits in scope for the July 20 – 21, 2024 PSPS.

Section 2.2 - Decision criteria and detailed thresholds leading to de-energization including the latest forecasted weather parameters versus actual weather. Also include a PSPS decision-making diagram(s)/flowchart(s) or equivalent along with narrative description (*D.19-05-042, Appendix A, page A22, D.21-06-014, page 284, SED Additional Information.*)

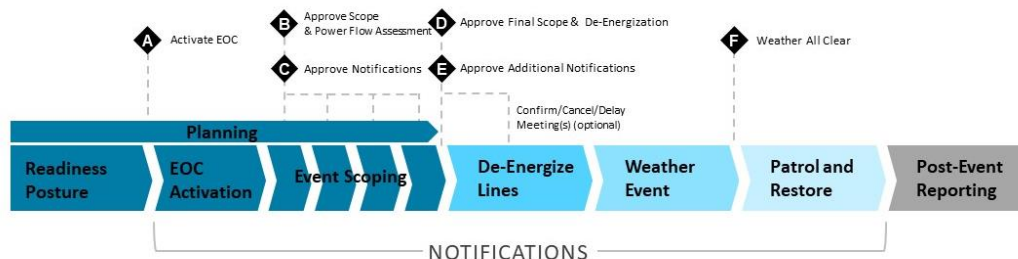
Response:

This section provides an overview of the criteria and threshold evaluation process that were used in the decision to de-energize during the July 20 – 21, 2024 PSPS.

PSPS Preparation and Scoping Process

At a high-level, Figure 4 shows the process used to prepare for a PSPS. PG&E utilized and referenced the following protocols and tools during the July 20 – 21, 2024 PSPS to determine the latest forecasted weather parameters versus actual weather. Appendix A includes anticipated parameters based on the latest forecast used to develop the planned de-energization scope versus actual weather parameters for each circuit.

Figure 4: PG&E's High-level PSPS Process Steps



PG&E considers executing a PSPS when strong gusty winds, critically low humidity levels, and low fuel moisture levels pose an unacceptable risk of causing fast-spreading, catastrophic wildfires. Assessments begin several days before the weather event is forecasted to take place.

We identify the weather conditions that could create high fire potential by using a combination of high outage and ignition potential, high-resolution internal and external weather forecasting models and data from federal agencies that include the following:

- Ignition Probability Weather (IPW): Determines the historical potential for ignitions from each analyzed weather event.
- Fire Potential Index (FPI): Assists with fire model development and calibration.
- Technosylva: Provides fire spread modeling via data inputs.
- PSPS models: Provides guidance for operation decision-making.

Through partnerships with external experts, we developed our machine learning models using historic datasets and advanced forecast models that provide a better understanding of historical weather events and improve our weather forecasting. These models use the following:

- Precise location data points across our service territory to conduct hourly weather analyses using high-resolution historical data.
- Over 100 trillion data points of historical weather and fuel.
- Hourly weather data such as temperature, relative humidity, wind speed, precipitation, pressure, and dead and live fuel moisture.
- Data storage and processing via the PG&E-Amazon Web Services Cloud.

Our thresholds and guidance for identifying critical fire risk and outage/ignition potential are determined by analyzing and rigorously testing our current PSPS protocols and criteria through three decades of historical weather data in and around California.

External forecast information from the NWS (e.g., Red Flag Warnings) and other forecast agencies are examined carefully. Furthermore, we coordinate with these agencies during high-risk periods via daily conference calls to ultimately decide whether to de-energize portions of the grid for public safety.

Tools and Technology

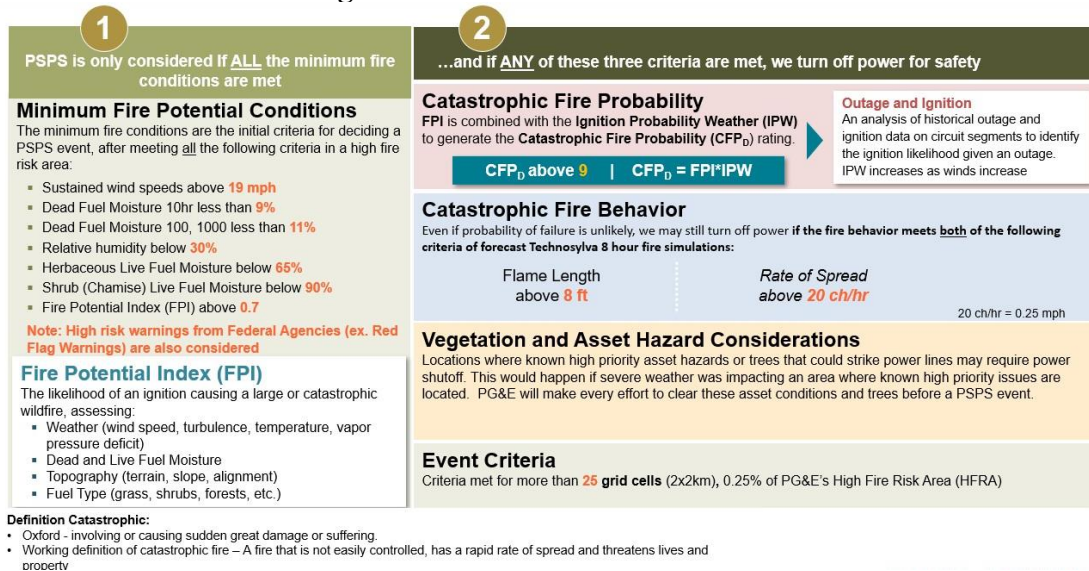
PG&E partners with Technosylva, an external expert in the wildfire modeling field to test and deploy cloud-based wildfire spread model capabilities. This helps us better understand where we might need to turn off power.

Each day, PG&E delivers our wildfire conditions datasets to Technosylva, who then perform over 100 million fire spread simulations to provide fire spread scenarios that help to identify circuits that may be at risk during dry, windy weather. These simulations are done every three hours, for the five days ahead.

Decision Criteria and Thresholds for Distribution PSPS Protocols

When determining whether to turn off power for safety, we start with the distribution system where the powerlines are closer to communities and generally more susceptible to dry, windy weather threats. The values presented in Figure 5 were developed using 10 years of PG&E's high-resolution climate data to help understand wildfire risk and the potential customer impacts of PSPS. We evaluate within a small geographic area (four square kilometers) and if any of the measures are forecasted to be met, we scope the circuit segments within that region for de-energization. There is no single criterion or threshold that will require turning off power to a distribution circuit. For event-specific thresholds, see Appendix A. Our process is outlined in Figure 5 below.

Figure 5: PSPS Protocols for Distribution



Step 1: Minimum Fire Potential Conditions

The first step to determine the scope of a PSPS is evaluating the Minimum Fire Potential Conditions (mFPC). This ensures that PSPS is only executed during wind events when atmospheric conditions and fuels are dry. A PSPS is evaluated if the following mFPC noted in step 1 of Figure 5 above are met.

These values were established based on an examination of historical fire occurrence in the PG&E service area, PSPS sensitivity studies using historical data viewed through the lens of both customer impacts and wildfire risk mitigated, as well as information published by federal agencies regarding fire behavior and criteria used to issue warnings to the public.

Step 2: In-Depth Review of Fire Risk

If all minimum fire conditions are met, we conduct an in-depth review of fire risk using three separate measures. If the criteria for any of these measures are met, we may need to turn off power for safety. We evaluate all of the factors below together, rather than isolating any specific factor to assess fire risk against the potential harms of de-energization. For event-specific factors, see Appendix A.

- Catastrophic Fire Probability:** This model combines the probability of fire ignitions due to weather impacting the electric system with the probability that a fire will be catastrophic if it starts. It is the combination of the Fire Potential Index Model (FPI) and the Ignition Probability Weather Model (IPW). The CFP_D model accounts for changes over time based on actual performance data. Thus, the model will address positive and negative trends in grid performance and reliability year-over-year, incorporating grid improvements such as system hardening, and enhanced vegetation management based on their performance at mitigating outages over time.
 - IPW Model: A machine learning model that uses 10 years of weather data to correlate approximately 500,000 outages occurring on PG&E's distribution grid. The model analyzes the potential for several types of power outages in a given weather event, as well as the potential for that outage to be the source of

an ignition. IPW learns from and accounts for changes on the grid from year-to-year.

- FPI Model: This model outputs the probability that a fire will become large or catastrophic and is used as a daily and hourly tool to drive operational decisions to reduce the risk of utility caused fires. It was enhanced in 2021 with additional data and improved analytic capabilities.
- Tree Considerations: Our PSPS protocols utilize a machine learning model to integrate the potential for trees to strike the lines into our IPW Model. This helps our meteorology teams more accurately analyze risk posed by trees and how that translates to increased ignition probability. See Figure 6 below explaining IPW modeling and Figure 7 below explaining PG&E's IPW combined with FPI to form PG&E's PSPS protocol, Catastrophic Fire Probability Distribution. Scenarios with a high risk of an IPW and a high FPI value will always warrant a PSPS. However, power may be turned off in other scenarios to avoid catastrophic wildfires.

Figure 6: Incorporating Tree Strike Potential into PSPS Modeling

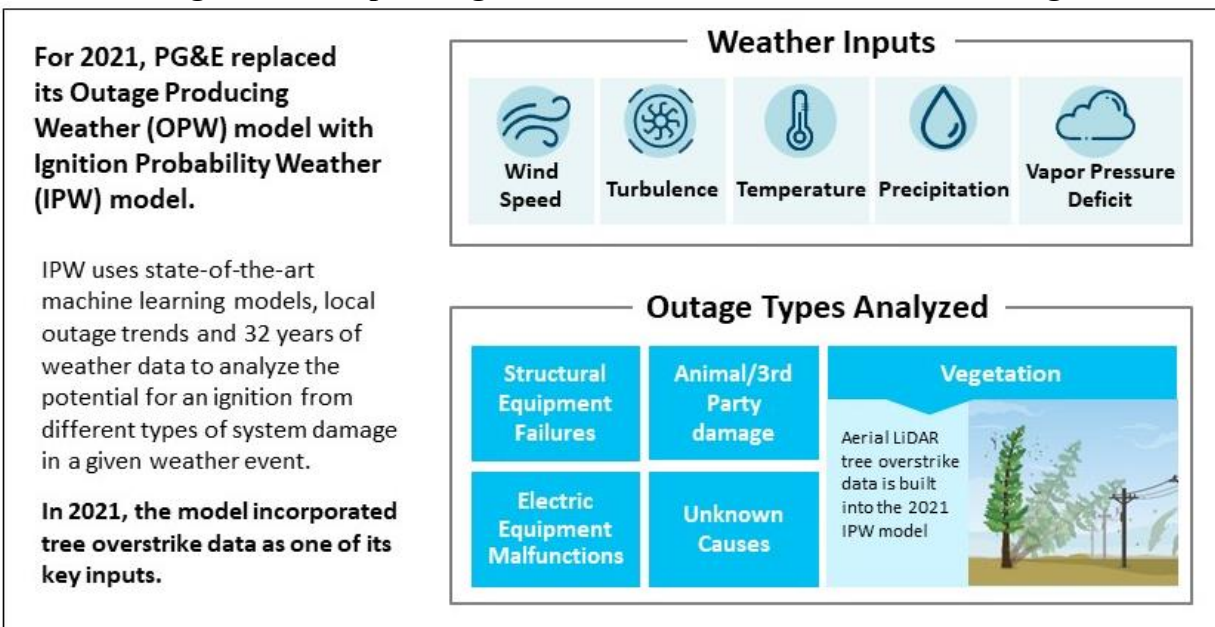
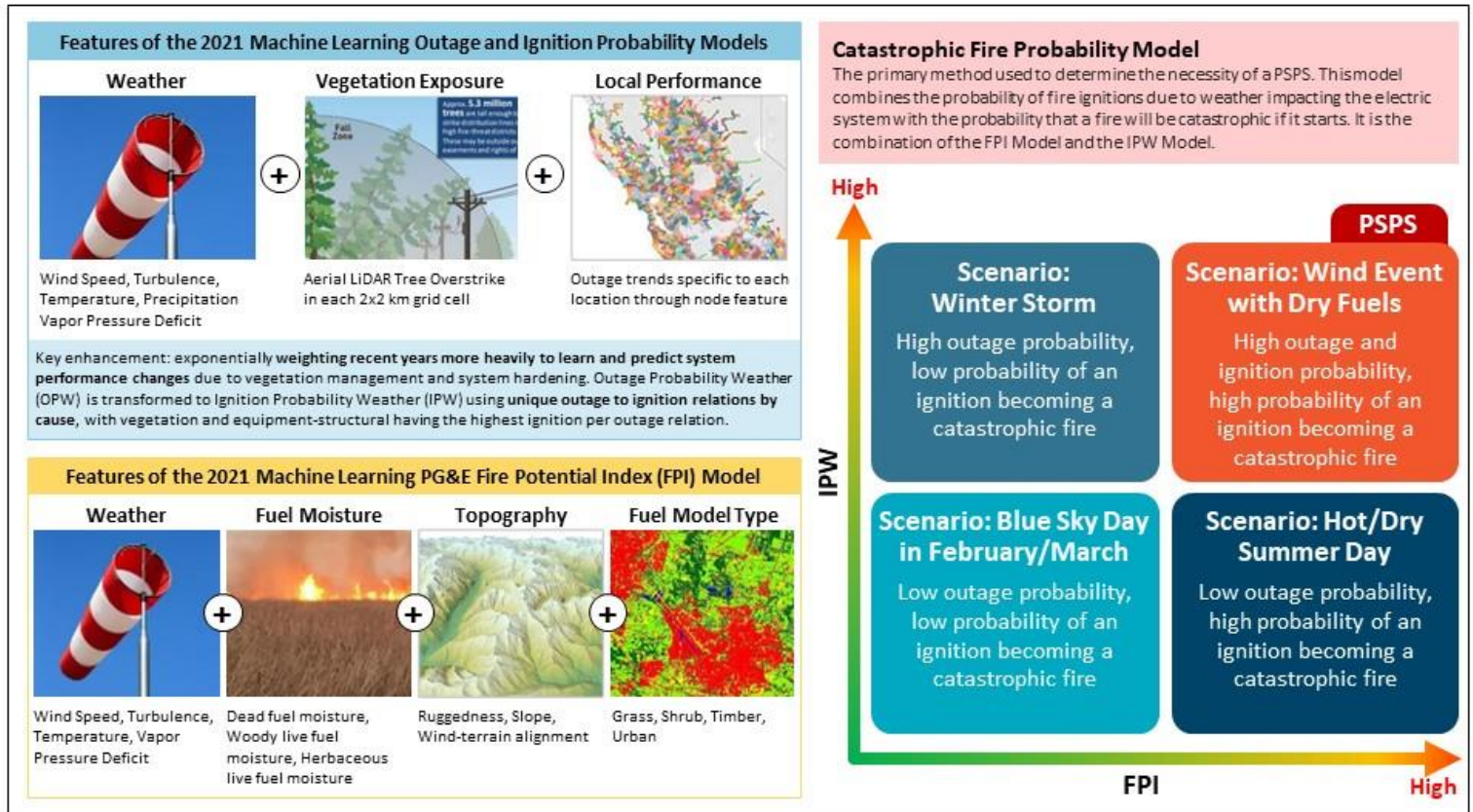


Figure 7: PG&E IPW Model and CFP_D Framework



- **Catastrophic Fire Behavior (CFB):** We also consider environmental conditions of significant wildfires, like dead and dying trees or drought conditions when determining to de-energize customers. This allows us to capture potential ignition events that are rarer and more difficult to forecast, such as animal contact and external debris impacting electrical lines. These locations are only considered once the mFPC are met. This is based on fire spread simulations using dynamic weather and fuel data for the event.
 - **Fireline Intensity:** The U.S. Forest Service Rocky Mountain Research Station did a study of fire line intensity which is determined by the size and components of flames. It is measured as the rate of heat energy released (Btu) per unit length of the fire line (ft) per unit (s). It is also calculated by estimating the flame length, which is the distance measured from the average flame tip to the middle of the base of the fire. We use probable fire line intensity to evaluate the potential need to turn off power.
- **Vegetation and Electric Asset Criteria Considerations:** We review locations from recent inspections where high-priority trees or electric compliance issues may increase the risk of ignition. If an area is forecast to experience minimum fire conditions and there are known issues with equipment or vegetation that have not yet been addressed, we may need to turn off power.

PSPS Protocols for Transmission

In addition to analyzing distribution circuits that may need to be de-energized for safety, we also review the transmission lines and structures in areas experiencing dry, windy weather conditions. Transmission lines are like the freeways of the electric system, carrying high voltage energy

across long distances. Similar to our distribution protocols, there is no single factor or threshold that will require turning off power to a transmission line.

Step 1: Minimum Fire Potential Conditions

When determining whether to turn off power for safety on transmission lines, we review the same minimum fire potential conditions as with distribution circuits.

If these conditions are met, we will then look at the below criteria to determine whether a transmission line must be turned off.

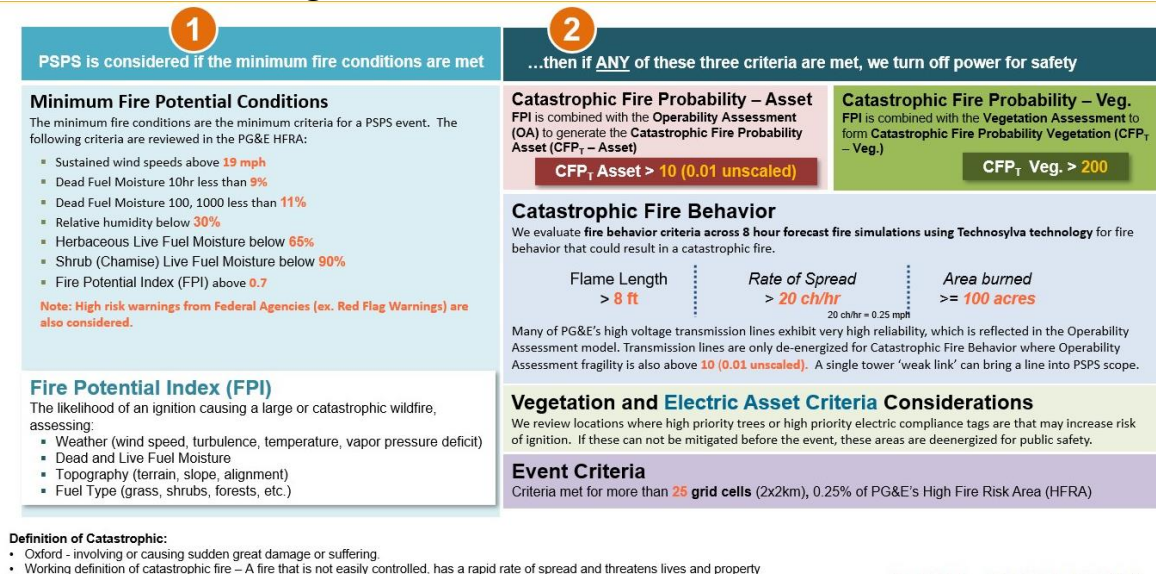
Step 2: In-Depth Review of Fire Risk

Once PG&E identifies the initial scope, we work with the California Independent Service Operator (CAISO) to ensure the initial scope is appropriate. This includes analyzing whether it will compromise the power supply to other jurisdictions, utilities or facilities connected to our system. This important step can last several hours, which is why the potential scope of a PSPS may change as we get closer to the forecasted weather event.

- Catastrophic Fire Probability – Asset (CFP_T – Asset): We use machine learning to assess the likelihood of equipment failure during a given weather event, and the subsequent risk of catastrophic wildfires if a failure occurs. This model uses a combination of the Operability Assessment (OA) and FPI Models, both in time and space, at every transmission structure to form the Transmission Catastrophic Fire Probability model for asset failures. The OA Model combines historical wind speeds for each structure, historical outage activity, Bayesian updating, and the condition of assets based on inspection programs to help understand the wind-related failure probability of each structure. The OA Model can be driven with forecast wind speeds to output the probability of failure at the structure level.
- Catastrophic Fire Probability – Vegetation (CFP_T – Veg): The transmission-specific vegetation risk model was derived by a collaborative effort between PG&E vegetation management and external contractors such as NV5 and Formation Environmental. This model leverages aerial LiDAR data to map the location and attributes of trees near transmission lines. The transmission vegetation risk model is based on several factors such as overstrike, the amount of unobstructed fall paths to a wire, the slope between tree and conductor, and tree exposure. The transmission vegetation risk model is combined with the FPI Model in space and time to form CFP_T – Veg.
- CFB: We may de-energize customers where the consequence of a potential wildfire ignition would be extreme, even if the probability of a power line or equipment failure is low.
- Vegetation and Electric Asset Criteria Considerations: We review locations from recent inspections where high-priority trees or electric compliance issues are present that may increase the risk of ignition.

Figure 7 provides a quantitative summary of our PSPS Protocols for Transmission.

Figure 7: PSPS – Protocols for Transmission



Step 3: Determining the Outage Area

Transmission lines meeting the criteria above then pass to the next stage of review. We conduct a Power Flow Analysis on the in-scope transmission lines (if applicable) to analyze any potential downstream impacts of load shedding.

After Determining the Outage Area for Distribution and Transmission

After determining the outage area both for Distribution and Transmission, PG&E reviews the forecasted customer impacts of each circuit against the forecasted wildfire risk of each circuit. If there's reasonable risk for ignition on the distribution circuits or transmission lines during the forecasted weather event, it is included in the PSPS scope. We then share this analysis internally during key decision-making points to inform PSPS decision making and further risk modeling.

Starting 12 hours before the forecasted PSPS de-energization time, we transition from evaluating forecast data to observing the weather in real-time. Based on real-time observations and analysis, we continually evaluate all the outage areas identified in the previous steps and use external tools and analysis to determine whether to initiate PSPS de-energization.

Decision-Making and Analysis to Validate if PSPS is Necessary

During high-risk periods, PG&E Meteorologists participate in daily interagency conference calls that commonly include multiple NWS local offices, the NWS western region headquarters, and representatives from the GACC, also known as Predictive Services. This call is hosted by the Northern California and/or Southern California GACC offices.

During these calls, the external agencies present their expert assessment on the upcoming periods and locations of risk, wind speeds and fuel moisture levels, and any other relevant factors to consider.

During a PSPS, PG&E's Lead Meteorologist, called the Meteorologist-in-Charge (MIC), summarizes these forecasts and discussions for the PG&E Officer-in-Charge (OIC), who makes the decision to execute a PSPS.

The following sources and tools are considered before initiating a PSPS by the MIC:

- Fire Weather Watches and Red Flag Warning (NWS - Federal)
- Significant fire potential for wind (GACC - Federal)
- Storm Prediction Center (part of NOAA - Federal)
- Daily interagency conference call with agencies during high-risk periods
- Field observer information
- Live weather data from weather stations
- Location of existing fires
- External weather model data

Based on the above analyses, we can determine how many customers may be subject to de-energization, and further investigate mitigation options, such as advanced switching solutions, sectionalization, the use of islanding, alternative grid solutions, and temporary generation, to support customers who could lose upstream power sources but are in areas that may be safe to keep energized.

We monitor and forecast weather over a multi-day horizon, so we can anticipate when a PSPS may be needed and activate our EOC as far in advance as possible. Our internal weather model and external modeling are updated multiple times per day. PG&E's meteorology team constantly evaluates both internal and external weather models for changes in weather event timing, strength, and potential locations impacted; our meteorology then incorporates these changes into a new weather scope generally once per day.

Weather shifts may force changes to PSPS scope and impacts at any point in time during PSPS planning and execution; this may allow us to avoid de-energization in some areas if fire-critical conditions lessen but can also cause some areas and customers to move into de-energization scope late in the process if forecasted fire-critical weather footprints change or increase. Possible changes in PSPS scope and impact are driven by the inherent uncertainty of weather and therefore in weather forecast models.

Section 2.3 - A thorough and detailed description of the quantitative and qualitative factors it considered in calling, sustaining, or curtailing each de-energization event including any fire risk or PSPS risk modeling results and information regarding why the de-energization event was a last resort, and a specification of the factors that led to the conclusion of the de-energization event. *(D.20-05-051, Appendix A, page 9, SED Additional Information.)*

Response:

The quantitative factors that were used in the decision to de-energize customers for safety is provided in Appendix A. Below, we outline a detailed description of the qualitative factors provided by our Meteorologists when determining to de-energize customers.

PG&E Meteorology Team Review

On Thursday, July 18, 2024, some weather forecast models began to show the potential for a dry, northerly wind event developing on July 20. On Thursday, July 18, PG&E's Meteorology team, Emergency Planning and Response team, and EOC Commander met to discuss the need for a potential PSPS.

The NWS did not issue Red Flag Warnings or Fire Weather Watches. The NWS – San Francisco issued fire weather zone forecasts for parts of their territory that mentioned a period of “near-critical fire weather” on July 20. The GACC forecast mentioned the period of breezy winds that

PG&E had scoped for, however, they maintained only a moderate risk for the area on July 20. Based on the emerging risk of a PSPS, we activated the EOC at 18:00 PDT.

The weather forecast and PSPS models were closely monitored leading up to the PSPS.

The initial PSPS scope was developed July 18 and reflected the risk of dry winds mostly along the Altamont Pass, near San Luis Reservoir and in the Panoche Valley. Some areas brought into scope for this PSPS were not within High Fire Risk Area (HFRA) / High Fire Threat District (HFTD). PG&E's Meteorology Team can view PSPS models outside HFRA areas in special circumstances when Subject Matter Expertise determines the situation is unusual and justifies de-energization.⁷ Areas outside of HFRA were included in scope due to the CFB criteria. Combined with the potential impact to downwind communities, it was decided there was a need to scope outside of the HFRA.

Numerous decision meetings were conducted to confirm or delay the decision to de-energize. The EOC commander made the decision to de-energize TP 5 at a confirm/delay meeting on July 20 at 14:17 PDT and later TP 4 at 15:12 PDT once minimum fire potential conditions were observed, as detailed in Appendix A. For the remaining time places, conditions did not materialize, and at 21:27 PDT PG&E cancelled the de-energization of the remaining TPs and issued the All-Clear at 19:30 PDT for TP 5 and 20:40 PDT for TP 4.

High Resolution PSPS Models Guidance

The tools and models outlined in Section 2.2 are part of the decision criteria that PG&E's Meteorologists consider the PSPS scope. Longer range weather forecast model data are used to determine the location and timing of a PSPS. Typically, these weather forecasts are less certain the farther the observed date. This is akin to the well-known hurricane "cone of uncertainty" in which the potential track of a hurricane is represented by an area that expands farther out in time, which resembles an expanding cone. Thus, there is an inherent tradeoff between the further out the forecasts are for a PSPS and the uncertainty in the PSPS scope and waiting until forecasts become more certain. This ultimately leads to changes in PSPS scope as weather forecast models are updated and the scope is refined.

As the PSPS unfolds in real-time, PG&E's Meteorologists transition to real-time observations of weather stations, satellite data, pressure gradients, and live feeds from Alert Wildfire Camera. These observations help to evaluate if the weather is behaving as expected. In many instances, models trend stronger or weaker with each model iteration leading up to a PSPS.

External PSPS Decision Inputs

On July 18, federal agencies North GACC and NWS – San Francisco acknowledged wildfire risk was elevated and the models raised concern regarding the strengthening onshore sea breeze, however, the agencies did not issue any RFWs or fire weather watches. Ultimately, the NWS – San Francisco issued a fire weather zone forecast mentioning near-critical fire weather conditions for July 20 due to the onshore sea breeze.

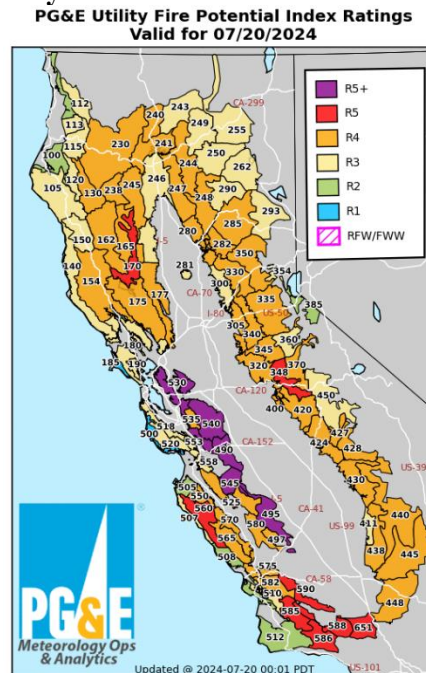
We compare our fire risk forecasts against those of external agencies for potential validation that there is shared recognition of high fire risk across the California meteorology community. Between July 18, 2024, and July 20, 2024, our analysis of fire risk justifying a PSPS was supported by the following sources:

⁷ See Section 2.2 for more details on CFB.

- North Ops Predictive Services issued their 7-day Significant Fire Potential Outlook showing Moderate Risk for Predictive Service Area NC03B – Diablo – Santa Cruz Mountains.
- While the NWS – San Francisco did not issue a Red Flag Warning or Fire Weather Watch for the area, they did mention “Near Critical Fire Weather conditions” in their Fire Weather Discussion.

We also review forecasted wind speeds in the potential PSPS-impacted counties to evaluate the need for a PSPS. Figure 8 also shows the Utility Fire Potential Index (FPI) Ratings for Fire Index Areas (FIAs) in PG&E’s service area for July 20, 2024. We determine the scope for PSPS outages within those FIAs with fire risk rating R5-Plus from PG&E’s FPI model.

Figure 8: PG&E Utility Fire Potential Index Ratings for July 20, 2024



Section 2.4 - An explanation of how the utility determined that the benefit of de-energization outweighed potential public safety risks, and analysis of the risks of de-energization against not de-energizing. The utility must identify and quantify customer, resident, and the general public risks and harms from de-energization and clearly explain risk models, risk assessment processes, and provide further documentation on how the power disruptions to customers, residents, and the general public is weighed against the benefits of a proactive de-energization (D.19-05- 042, Appendix A, page A24, D.21-06-014, page 284, SED Additional Information.)

Response:

For the July 20 – 21, 2024 PSPS, PG&E used the PSPS Risk Model using the latest scope prior to the first potential de-energization. This initially supported initiating a PSPS based on the forecasted impact information and indicated that each of the 17 distribution circuits and eight transmission lines in the latest scope surpassed the analysis threshold of one to support a PSPS. Note the PSPS Risk Model calculations are based on forecasted conditions.

PG&E's PSPS Risk-Benefit Tool, which is further detailed below, addresses the CPUC's requirements presented in the 2019 PSPS OIL.⁸ This decision requires California investor-owned utilities (IOUs) to quantify the risk/benefits associated with initiating or not initiating a PSPS for our customers.

PG&E incorporated the aforementioned risk-benefit analysis into our PSPS execution process to help inform our PSPS decision-making process. Our risk-benefit tool aligns with California IOUs and the current industry-standard Multi-Attribute Value Function (MAVF) framework, as defined through the Safety Modeling Assessment Proceeding (SMAP), which specifies how various consequences are factored into a risk calculation. Utilizing this framework, we incorporate PSPS forecast information into our PSPS Risk-Benefit Tool, which is further described under the "Risk Assessment" section below.

The output of the tool is a ratio that compares the calculated PSPS potential benefit from initiating de-energization (i.e., mitigation of catastrophic wildfire consequence) to the risks associated with PSPS (i.e., impact to customers resulting from a PSPS outage). Key inputs in the risk-benefit analysis include results from Technosylva wildfire simulations specific to the distribution circuit and transmission lines in scope for a potential de-energization, the number of customers forecasted to be de-energized, and the forecasted number of customer minutes across each identified circuit in scope for a potential de-energization.

After the potential de-energization scope is determined, including the identification of potentially impacted circuits for the potential PSPS in question, this scope and the Technosylva wildfire simulation outputs are used as inputs into the Risk-Benefit tool, which quantifies the potential public safety risk and wildfire risk resulting from the forecasted impacts of the pending PSPS. Note, however, that the Wildfire Risk Score is based on an 8-hour simulation from Technosylva and while useful, in some cases this can significantly understate the risk. Thus, the MIC may still recommend to de-energize circuits where the Risk-Benefit tool shows higher PSPS risk than Wildfire risk.

⁸ D. 21-06-014

Risk Assessment

As referenced above, PG&E's PSPS Risk-Benefit Tool utilizes the state-wide standard MAVF framework that captures the safety, reliability, and financial impact of identified potential risk events, as outlined in our Enterprise Risk Register.⁹ The tool's calculations use a non-linear scaling of consequences reflecting our focus on low-frequency/high-consequence risk events without neglecting high-probability/low-consequence risk events. Developed by the PSPS Risk-Benefit Tool, MAVF scores are used to compare the potential de-energization risk from a forecasted PSPS to the potential risk of catastrophic wildfires from keeping the circuits energized, specific to the potentially impacted circuits being considered for PSPS de-energization.

The following inputs are used in calculations to build MAVF risk scores for PSPS outages and wildfires, which are ultimately weighed against one another:

- Technosylva Wildfire Simulation Data: Fire simulation forecasts on the consequence of a potential wildfire's impact on customers, wildlife and infrastructures on each circuit for every three hours. These values are based on Technosylva's proprietary and sophisticated wildfire modeling, using real-time weather models, state-of-the-art fuel, and 8-hour fire spread modeling.
- Forecasted Circuits: The final list of the distribution circuits and transmission lines identified to be in-scope for a potential PSPS.
- Customer Minutes: Forecasted outage duration the customers will face by the potential PSPS.
- Customers Impacted: Forecasted number of customers anticipated to be impacted by the potential PSPS.
- Customer Category and Critical Customer Adjustment Factor: The type of customer (ex. MBL program, etc.) is incorporated into the analysis through the use of a "critical customer adjustment factor" which is applied to the customer outage duration to reflect a higher risk score for customers who are at a greater adverse risk of a potential de-energization event.

Once the above data are made available and incorporated into the tool, the modeling considerations described below are used to estimate the consequence of the: (1) potential wildfire risk and (2) PSPS risk at the per-circuit level. Throughout the tool, a variety of modeling considerations are made to facilitate calculations which are included in Table 2 and summarized in Figure 9.

⁹ Full details of the MAVF methodology are provided through the Risk Assessment and Modeling Phase (RAMP) Report RAMP Report, pp. 3-3 to 3-15 and General Rate Case (GRC) workpapers in response to Energy Division GRC-2023-PhI_DR_ED_001_Q01Supp01.

Table 2: 2024 PSPS Risk-Benefit Consequence Modelling Considerations

Consequence Type	Wildfire Consequence Considerations	PSPS Consequence Considerations
Safety	Calculated based on maximum population impacts derived from Technosylva wildfire simulation models and a fatality ratio based on National Fire Protection Association (NFPA) data.	Calculated from an estimate of Equivalent Fatalities (EF) per Million Customer Minutes Interrupted (MMCI). The EF/MMCI ratio is estimated from previous PG&E PSPS outages and other large external outage events. ¹⁰
Reliability	N/A	Calculated directly from the potential number of customers impacted and outage duration based on customer minutes interrupted.
Financial	Calculated based on maximum building impacts derived from Technosylva wildfire simulation models and a cost per structure burned previously evaluated in 2020 RAMP Report. ¹¹	Calculated based on two financial estimates 1) distribution of a lump sum cost of execution across all relevant circuits and 2) an estimated proxy cost per customer in scope per PSPS. ¹²

Potential Wildfire Risk

Wildfire consequence impacts are calculated based on the outputs of the Technosylva simulations. Variables include 1) population impacted by wildfire and 2) structure impacted by wildfire used to calculate natural unit values for two consequence components:

- Wildfire Safety Consequence: Equivalent Fatalities (EF)
- Wildfire Financial Consequence: Financial Cost of Wildfire (in dollars)

Potential PSPS Risk

PSPS consequence impacts are based on the following values: duration of de-energization by circuit, and number of customers impacted by de-energization on each circuit. These input values are used to calculate natural unit values for three consequence components:

- PSPS Safety Consequence: Equivalent Fatalities (EF) as an output of Customer Minutes interrupted
- PSPS Electric Reliability Consequence: Customer Minutes Interrupted × Critical Customer Adjustment Factor
- PSPS Financial Consequence: Financial Cost of PSPS (in dollars) × Critical Customer Adjustment Factor

Once the consequence values (safety, reliability, financial) are estimated, they are converted into MAVF risk scores. Once the Risk-Benefit tool calculates the impacts between the PSPS and a

¹⁰ Previous PG&E PSPS include 2019-2021 events, and other large external outage events include the 2003 Northeast Blackout in New York City, 2011 Southwest Blackout in San Diego, 2012 Derecho Windstorms, 2012 Superstorm Sandy, 2017 Hurricane Irma, 2021 Blackout event.

¹¹ See A.20-06-012.

¹² The assumptions used in these calculations, including the proxy cost per customer per PSPS, are subject to be updated and are not intended to prejudice or create precedent with regard to the development of more precise values of resiliency or cost of PSPS metrics being considered in other ongoing proceedings at the California Public Utilities Commission, such as the Risk-Based Decision-Making Rulemaking [R.20.07.013] and the Microgrid and Resiliency Strategies.

wildfire, it is summarized in Figure 10 by indicating if the adverse impact from a PSPS outweighs the risk of a wildfire.

Figure 9: Visual Representation of PSPS Risk-Benefit Tool

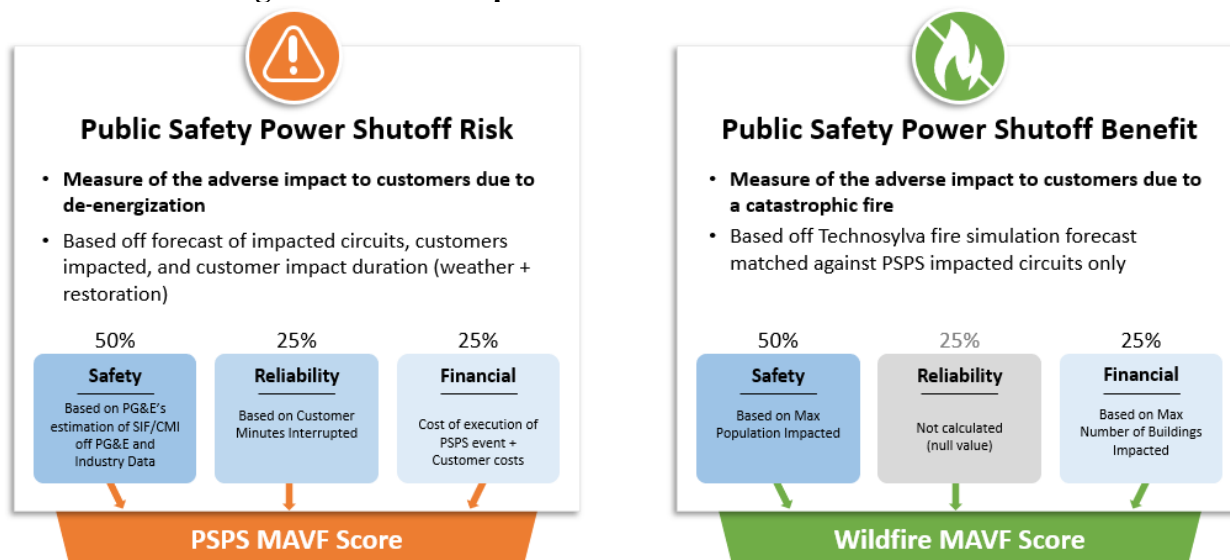
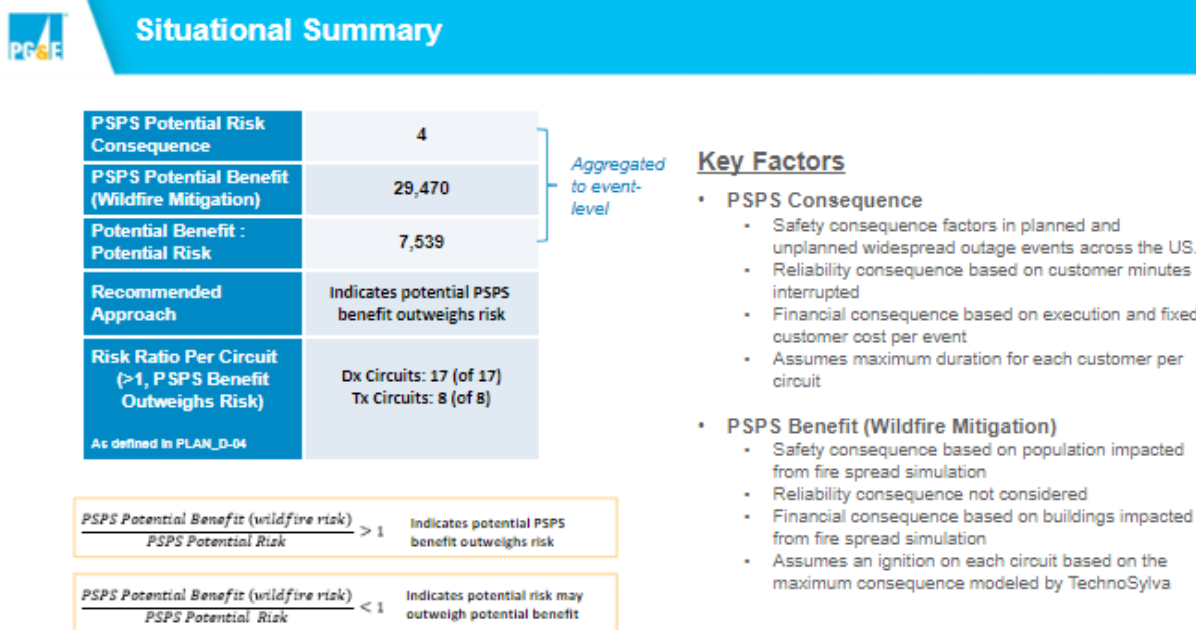


Figure 10: PSPS Potential Benefit Versus PSPS Potential Risk Consequence



Section 2.5 - Explanation of alternatives considered and evaluation of each alternative. (D.19-05-042 Appendix A, page A22.)

Response:

After reviewing the meteorological information that indicated a potential for catastrophic wildfire and the impacts on customers through de-energization, we considered whether alternatives to de-energizing, such as additional vegetation management and disabling automatic reclosers, could adequately reduce the risk of catastrophic wildfire thus lowering the need for de-

energization. We determined these measures alone did not reduce the risk of catastrophic wildfire in areas within the PSPS scope sufficiently to protect public safety.

Leading up to the July 20 – 21, 2024, PSPS, PG&E readied de-energization mitigations, reviewed alternatives to de-energization and took the following steps:

- Our Operations team reviewed asset and vegetation tags that included incremental customers into PSPS scope and worked to correct these tags.
- We conducted hazard tree mitigation efforts on circuits potentially in PSPS scope in the days leading up to the PSPS. Tree-trimming near a utility line can keep limbs and trunks from nearby trees from falling into a line, but it does not mitigate against broken limbs from distant trees outside the vegetation management perimeter that could blow into a line or break utility equipment.
- Pre-patrols of potentially impacted transmission facilities were also ongoing in the days leading up to the time of anticipated de-energization. While pre-patrols can help identify and correct asset tags on impacted transmission lines, even transmission lines in fully healthy condition may still pose a wildfire risk. Thus, pre-patrol of potentially impacted transmission facilities was not considered a sufficient alternative to PSPS.
- We enabled EPSS and disabled automatic reclosing in Tier 2/Tier 3 HFTD areas. This reduces the ignition risk from attempts to re-energize circuits via automatic reclosing.
- We prepared to reduce the public safety impacts of de-energization by employing granular scoping processes to significantly reduce the public safety impacts of de-energization by de-energizing smaller segments of the grid within the close confines of the fire-critical weather footprint, rather than de-energizing larger amounts of customers in more populated areas.
- We prepared to reduce the public safety impacts of de-energization by reviewing the total count of impacted customers and the impact of potential de-energization upon MBL program customers, critical facilities, and the back-up generation capabilities of critical facilities that pose societal impact risks if de-energized (e.g., critical infrastructure).
- We reviewed opportunities for islanding, sectionalization, temporary generation, backup-generation, and alternate grid solutions to reduce and mitigate the number of customers de-energized.
- We reviewed opportunities to reduce the public safety impacts of de-energization by providing local CRCs to support customers in those impacted communities.
- Supporting vulnerable customers through California Foundation for Independent Living Centers (CFILC) and Community Based Organizations (CBO) resource partners that offered various services to customers impacted by this PSPS. Further information is detailed in Section 6.5.
- Extensive use of Advanced Notifications and outreach tools to notify impacted customers of the expected de-energization.
- We increased our restoration efforts with the use of our resources including helicopters to conduct line safety patrols after the Weather “All-Clear”, accessible equipment for patrols and needed repairs, and restoring service to safe lines subject to operational safety.

Section 3 – De-energized Time, Place, Duration and Customers

Section 3.1 - The summary of time, place and duration of the event, broken down by phase if applicable (*Resolution ESRB-8 page 3, SED Additional Information.*)

Response:

The PSPS occurred between July 20 – 21, 2024, in two TPs located in three counties.

Section 3.2 - A zipped geodatabase file that includes PSPS event polygons of de-energized areas. The file should include items that are required in Section 3.3. (SED Additional Information.)

Response:

A zipped geodatabase file that includes PSPS polygons of final de-energized areas combined with the PSPS data can be found in the attachment “*PGE_PSPS_EVENT_20240720.gdb.zip*.”

Section 3.3 - A list of circuits de-energized, with the following information for each circuit. This information should be provided in both a PDF and excel spreadsheet (*Resolution ESRB-8, page 3, SED Additional Information.*)

- **County**
- **De-energization date/time**
- **Restoration date/time**
- **“All Clear” declaration date/time**
- **General Order (GO) 95, Rule 21.2-D Zone 1, Tier 2, or Tier 3 classification or non- High Fire Threat District**
- **Total customers de-energized**
- **Residential customers de-energized**
- **Commercial/Industrial Customers de-energized**
- **Medical Baseline (MBL) customers de-energized**
- **AFN other than MBL customers de-energized**
- **Other Customers**
- **Distribution or transmission classification**

Response:

A total of 212 customers were de-energized during the PSPS. Of the circuits de-energized, four were distribution and three were transmission. There were 112¹³ residential, 92 commercial/industrial, nine MBL program customers, 18 Access and Functional Need Customers (AFN) other than MBL, and 24 customers in the “Other”¹⁴ category. Appendix B lists de-energized circuits and the relevant information relating to each circuit. Delayed restoration time due to reclassification and/or damages are further noted for each circuit.

¹³ MBL program and AFN customers are included within the count of residential customers affected.

¹⁴ ‘Other’ includes customers that do not fall under the residential or commercial/industrial categories such as governmental agencies, traffic lights, agricultural facilities, and prisons.

Section 4 – Damages and Hazards to Overhead Facilities

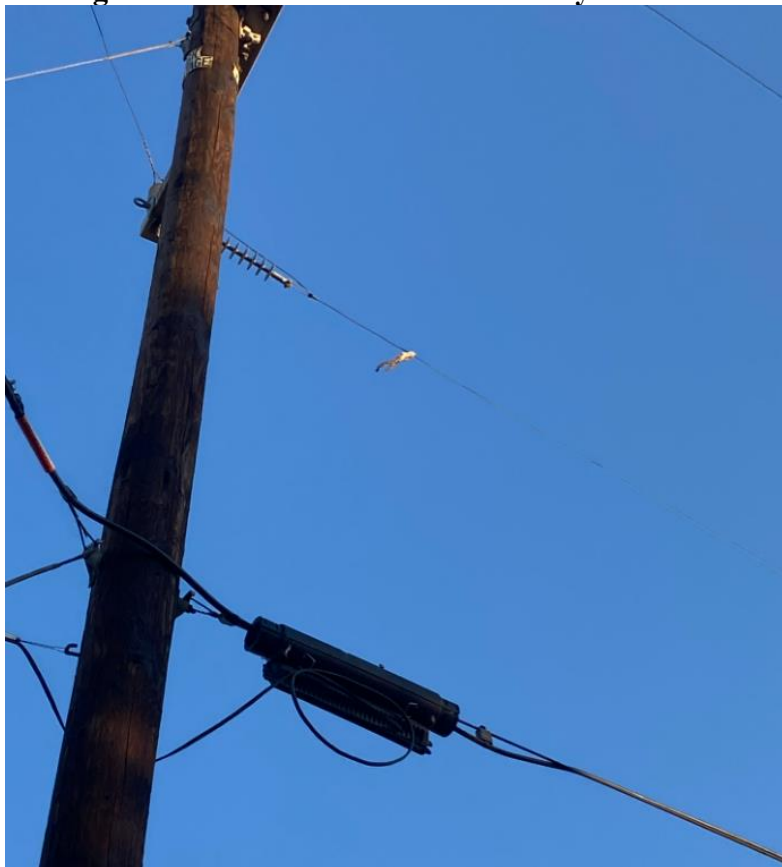
Section 4.1 – Description of all found wind-related damages or hazards to the utility’s overhead facilities in the areas where power is shut off. (*Resolution ESRB-8, page 3, SED Additional Information.*)

Response:

On July 20, 2024, weather stations near the PSPS areas recorded wind gusts as high as 58 miles per hour. This is shown in Figure 19 and Table 19.

During patrols of the de-energized circuits prior to restoring power, PG&E found one incident of one wind-related hazard. Damages are conditions that occurred during the PSPS, likely wind-related, necessitating repair or replacement of PG&E’s asset, such as a wire down or a fallen pole, while hazards are conditions that might have caused damages or posed an electrical arcing or ignition risk had PSPS not been executed, such as a tree limb found suspended in electrical wires. The damage location is illustrated in Figure 11 and mapped in Figure 12.

Figure 11: Vegetation-Hazard in Alameda County – Tree branch on line



Section 4.2 - A table showing circuit name and structure identifier (if applicable) for each damage or hazard, County that each damage or hazard is located in, whether the damage or hazard is in a High Fire-Threat District (HFTD) or non-HFTD, Type of damage/hazard of damage. (SED Additional Information.)

Response:

A table of damages and hazards within the de-energized areas can be found in Appendix C.

Section 4.3 - A zipped geodatabase file that includes the PSPS event damage and hazard points. The file should include items that are required in Section 4.2. (SED Additional Information.)

Response:

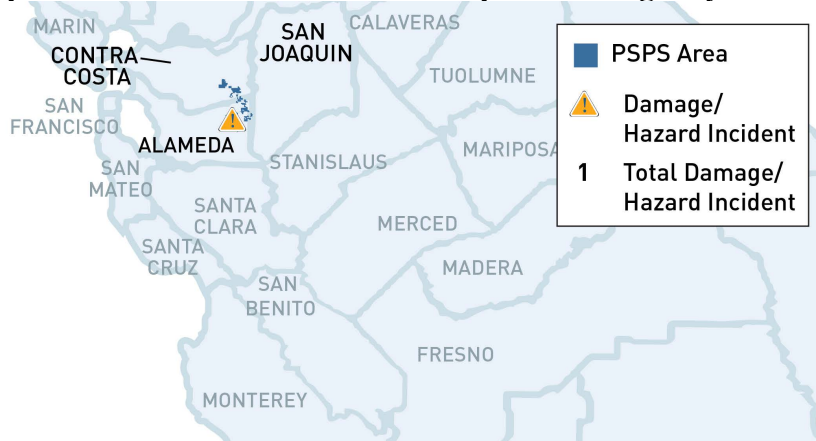
A zipped geodatabase file that includes the PSPS damage and hazard points can be found in attachment, “PGE_PSPS_EVENT_DAMAGES_HAZARDS_20240720.gbd.zip.”

Section 4.4 - A PDF map identifying the location of each damage or hazard. (SED Additional Information.)

Response:

See Figure 12 below for a map identifying the location of the hazard.

Figure 12: Map of Hazard Incident in PSPS Footprint During July 20 – 21, 2024 PSPS



Section 5 – Notifications

Section 5.1 - A description of the notice to public safety partners, local/tribal governments, paratransit agencies that may serve all the known transit- or paratransit-dependent persons that may need access to a community resource center, multi-family building account holders/building managers in the AFN community, and all customers, including the means by which utilities provide notice to customers of the locations/hours/services available for CRCs, and where to access electricity during the hours the CRC is closed. (Resolution ESRB-8, page 3. D21-06-034, Appendix A, page A2, A9-A10, SED Additional Information.)

Response:

Throughout the PSPS, PG&E made significant efforts to notify Tribal/Local Governments, Public Safety Partners, CBOs (including paratransit agencies) and impacted customers in accordance with the CPUC PSPS Phase 1 Guidelines.¹⁵

PG&E followed the Notification Plan discussed in our [PG&E's 2024 Pre-Season Report, Appendix C: Notification Plan](#), pp. 70-79. In addition, PG&E completed the following:

- PG&E worked closely with telecommunications service providers throughout the PSPS to effectively coordinate, share information, and manage the weather event. PG&E also provided telecommunications service providers with a dedicated PG&E contact in the EOC known as the Critical Infrastructure Lead (CIL), who shared up-to-date PSPS information and answered specific, individual questions. These partners could reach the CIL 24/7 during a PSPS by e-mail or phone. In addition, PG&E proactively reached out to five telecommunications service providers¹⁶ via email or phone as weather changes or new information regarding the PSPS became available.
- In accordance with the Phase 3 PSPS Guidelines,¹⁷ PG&E provided proactive notifications and impacted zip code information to paratransit agencies that served known transit- or paratransit-dependent persons. All notifications to paratransit agencies included a link to the PSPS emergency website updates page, pge.com/pspsupdates and a section called “Additional Resources” with a link to a map showing areas potentially affected by the shutoff. This site also directs users to other webpages, such as the CRC page, which includes CRC information such as locations, hours, and services available for CRCs (see Section 9). The PSPS emergency website updates page also includes two prominent buttons at the top of the page, allowing customers to look up an address to determine if it could be impacted, as well as to the map showing areas potentially affected by the shutoff.
- Every PSPS notification directs recipients to pge.com/pspsupdates, which includes a link to CRC information. This website prominently highlights the dedicated CRC page, which includes CRC locations, hours of operation, services available at each site information regarding how to find local CRCs and via the PSPS outage map and where to access electricity during the hours CRCs are closed.
- PG&E considers multi-family building account holders/building managers in the Access and Functional Needs (AFN) community as part of our All Customers

¹⁵ D.19-05-042.

¹⁶ AT&T, Crown Castle International, Metro PCS Inc., T-Mobile West Corporation, Verizon Wireless

¹⁷ D.21-06-034.

(including MBL program customers and Self-Identified Vulnerable [SIV]¹⁸ customers) recipient group. For information on PG&E’s outreach and community engagement with master-metered owners, property managers, and building account holders, refer to [PG&E’s AFN Quarterly Progress Report](#) of activities between January 1, 2024, and March 31, 2024.

Table 3 provides a description of the notifications PG&E sent to Tribal/Local Governments Public Safety Partners, and all customers in accordance with the minimum timelines set forth by the CPUC PSPS Phase 1 Guidelines.¹⁹

Table 3: Notification Descriptions

Type of Notification	Recipients	Description
PRIORITY NOTIFICATION: 48-72 hours in advance of anticipated de-energization²⁰	Public Safety Partners, CBOs, ²¹ transmission level customers, and municipal utilities	<p>On July 18, 2024, PG&E’s Meteorology Team noted a potential PSPS and updated the weather forecast on pge.com/weather to “elevated” in certain parts of the service area. At this time, local PG&E representatives called each County Office of Emergency Services (OES) in PG&E’s electrical service area and select Tribes and cities to inform them that PG&E is monitoring an increased potential of PSPS outages.</p> <p>Following PG&E’s activation of its EOC, the following was completed:</p> <ul style="list-style-type: none"> PG&E submitted a PSPS Notification Form to Cal OES (California Governor's Office of Emergency Services) and sent an e-mail to the CPUC notifying them that PG&E’s EOC has been activated and that PG&E is monitoring for potential PSPS. PG&E sent notifications to other Public Safety Partners²² via call, text and e-mail; these notifications included the following information: <ul style="list-style-type: none"> Estimated window of the de-energization time When weather is anticipated to pass. Estimated Time of Restoration (ETOR). Links to the PSPS Portal where event-specific maps and information are available.

¹⁸ Self-Identified Vulnerable (SIV) is inclusive of customers who have indicated they are “dependent on electricity for durable medical equipment or assistive technology” as well as customers that are not enrolled or qualify for the MBL program and “certify that they have a serious illness or condition that could become life threatening if service is disconnected.” In accordance with D.21-06-034, PG&E includes customers who have indicated they are “dependent on electricity for durable medical equipment or assistive technology” in an effort to identify customers “above and beyond those in the medical baseline population” to include persons reliant on electricity to maintain necessary life functions including for durable medical equipment and assistive technology. This designation remains on their account indefinitely.

¹⁹ D.19-05-042.

²⁰ PG&E sent Priority Notifications to Public Safety Partners and transmission-level customers as soon as the EOC activated for the July 20-21, 2024 PSPS. See Section 5.2 and 5.5 for more information.

²¹ Phase 3 D.21-06-034, Appendix A, page A9, Section G. MBL and AFN Communities, No. 4, Each electric investor-owned utility must provide proactive notification and impacted zip code information to paratransit agencies that may serve all the known transit- or paratransit-dependent persons that may need access to a CRC during a PSPS.

²² Other Public Safety Partners refers to first/emergency responders at the local, state, and federal level, water, wastewater, and communication service providers, affected CCAs, publicly owned utilities/electrical cooperatives, the CPUC, the California Governor’s Office of Emergency Services, and the California Department of Forestry and Fire Protection.

Type of Notification	Recipients	Description
		<ul style="list-style-type: none"> Local PG&E representatives called potentially impacted County OES and select Tribes to inform them that PG&E is monitoring an increased potential of PSPS.
WATCH NOTIFICATION: 24-48 hours in advance of anticipated de-energization	Public Safety Partners, CBOs, and All Customers (including MBL program customers and SIV customers), transmission level customers, and municipal utilities	<p>During this time, the following was completed:</p> <ul style="list-style-type: none"> PG&E submitted a PSPS Notification Form to Cal OES. PG&E sent notifications to other Public Safety Partners, transmission level customers, municipal utilities, and all customers via call, text message and e-mail; these notifications included the following information: <ul style="list-style-type: none"> Estimated window of the de-energization time. When the adverse weather is anticipated to pass. ETOR. For Public Safety Partners only: Links to the PSPS Portal. For Customers only: Potentially impacted addresses, links to PSPS Updates webpage with CRC information, and resources for AFN customers, including but not limited to information on the MBL program, language support, and the Portable Battery Program. For transmission-level customers only: Transmission Substation Name and Line name serving substation. PG&E sent notifications to MBL program customers, including tenants of master metered accounts, and SIV customers every hour until the customer confirmed receipt of the notification. PG&E also sent Cancellation Notifications to Public Safety Partners and customers within two hours of being removed from scope; this was to inform them that power would not be shut off. <p>Customer notifications were provided in English, with information on how to get PSPS information in translated languages. Customers with their language preference selected in their PG&E accounts received in-language (translated) notifications. Public Safety Partner notifications were provided in English.</p>
WARNING NOTIFICATION: 1-4 hours in advance of anticipated de-	Public Safety Partners, CBOs, and All Customers (including MBL program	<p>During this time, the following was completed:</p> <ul style="list-style-type: none"> PG&E submitted a PSPS Notification Form to Cal OES and sent an e-mail to the CPUC notifying them that PG&E has made the decision to de-energize. PG&E sent notifications to other Public Safety Partners, transmission-level customers, and customers;

Type of Notification	Recipients	Description
energization, if possible	customers, SIV customers), transmission level customers, and municipal utilities	<p>these notifications included the same key PSPS timing information and resource links as the “Watch Notification.”</p> <ul style="list-style-type: none"> • PG&E sent notifications to MBL program customers, including tenants of master metered accounts, and SIV customers every hour until the customer confirmed receipt of the notification. • PG&E also sent Cancellation Notifications to Public Safety Partners and customers within two hours of being removed from scope; this was to inform them that power would be shut off. <p>Customer notifications were provided in English, with information on how to get PSPS information in translated languages. Customers with their language preference selected in their PG&E accounts received in-language (translated) notifications. Public Safety Partner notifications were provided in English.</p>
POWER OFF NOTIFICATION: When de-energization is initiated	Public Safety Partners, CBOs, and All Customers (including MBL program customers and SIV customers), transmission level customers ²³ , and municipal utilities	<p>When shut off was initiated, the following was completed:</p> <ul style="list-style-type: none"> • PG&E submitted a PSPS State Notification Form to Cal OES and sent an e-mail to the CPUC to notify them that de-energization has been initiated. • Agency Representatives of PG&E conducted a live call and/or sent an e-mail, as appropriate, to County OES that were within the potential PSPS scope area and select Tribes and cities to inform them that customers within their jurisdiction were beginning to be de-energized. • PG&E Grid Control Center (GCC) conducted live agent calls to impacted transmission-level customers. • PG&E sent notification to other Public Safety Partners, municipal utilities, transmission level customers and customers via call, text messages, and e-mail, which included: <ul style="list-style-type: none"> ○ Impacted addresses (for customers only). ○ De-energization time. ○ When the adverse weather is anticipated to pass. ○ For Customers Only: Links to the PSPS Updates webpage with CRC information, and resources for AFN customers, including but not limited to information on the MBL program, Meals on Wheels, language support, and the Portable Battery Program.

²³ Transmission-level customers receive a GCC live call before de-energization and prior to re-energization.

Type of Notification	Recipients	Description
		Customer notifications were provided in English, with information on how to get PSPS information in translated languages. Customers with their language preference selected in their PG&E accounts received in-language (translated) notifications. Public Safety Partner notifications were provided in English.
WEATHER “ALL-CLEAR”/ETOR UPDATE NOTIFICATION: Immediately before re-energization begins	Public Safety Partners, CBOs, and All Customers (including MBL program customers and SIV customers), transmission level customers, and municipal utilities	<p>After the weather event had passed and the area is deemed safe to begin patrols and restoration, PG&E completed the following:</p> <ul style="list-style-type: none"> • Submitted a PSPS State Notification Form to Cal OES and sent an e-mail to the CPUC notifying them that PG&E is initiating re-energization patrols. • Sent notifications to other Public Safety Partners, transmission level customers²⁴, municipal utilities and customers via call, text message and e-mail; these notifications included the ETOR. • Sent “PSPS update” notifications to customers if their ETOR changed; two ways that an ETOR may change include: <ul style="list-style-type: none"> ○ New field or meteorology conditions. ○ Damage was found during patrols and repair is needed. <p>Customer notifications were provided in English, with information on how to get PSPS information in translated languages. Customers with their language preference selected in their PG&E accounts received in-language (translated) notifications. Public Safety Partner notifications were provided in English.</p>
RESTORATION NOTIFICATION: When re-energization is complete	Public Safety Partners, CBOs, and All Customers (including MBL program customers and SIV customers), transmission level customers, and municipal utilities	<p>GCC conducted live agent calls to notify impacted transmission-level customers of restoration.</p> <p>Once customers, including MBL program customers and SIV customers, were restored, they received notifications via call, text and e-mail. This was done using an automated process that issued customer notifications every 15 minutes upon restoration of service. Customer notifications were provided in English, with information on how to get PSPS information in translated languages. Customers with their language preference selected in their PG&E accounts received in-language (translated) notifications.</p> <p>Once all customers were restored, PG&E submitted the final PSPS State Notification Form to Cal OES, sent an e-mail to the CPUC confirming restoration of PSPS outages</p>

²⁴ Transmission lines serving impacted Transmission-level Customers and Municipal Utilities may cut across multiple Fire Index Areas (FIAs) and will only be notified when all those FIAs that the line cuts across have been given the All-Clear.

Type of Notification	Recipients	Description
		and reclassification of customers if applicable, and sent a notification to Public Safety Partners via call, text and e-mail. Public Safety Partner notifications were provided in English.

In addition to providing notifications to Tribal/Local Governments, Public Safety Partners, CBOs (including paratransit agencies) and impacted customers, PG&E alerted the public in advance of de-energization, via media and PG&E's website.

Media Engagement

From the time PG&E publicly announced the potential PSPS until customers were restored, PG&E engaged with the public through media described below.

- Media notifications were handled directly with outlets covering impacted areas.
- Identified approximately 33 unique print, online, and broadcast stories.
- Provided regular, ongoing news releases to more than 20 California news outlets and reporters, as well as several syndicated national outlets. Also, our Integrated Multicultural Communications team reached out to 39 multi-cultural news outlets.
- Handled approximately eight media inquiries, either from media outlets that contacted PG&E's 24-hour media line or direct calls to field media representatives and participated in two media interviews to provide situational updates and preparedness messages for the PSPS.

PG&E Website

During this PSPS, PG&E placed an Informational Alert on the [pge.com](https://www.pge.com) home page that drove traffic to PG&E's PSPS site and implemented tools to drive traffic to and maintain stability of the PSPS emergency website/PSPS updates page pgealerts.alerts.pge.com/updates. Visits to the emergency website peaked on Saturday, July 20, 2024, with 60,090 visits and 139,111 page views. The emergency website had 107,177 visits and 246,932 page views from the time the PSPS began to the time all customers had been restored to power.

We remain committed to the continuous improvement of our websites to better meet the diverse needs of its customers. As we launch new features and functionality to [pge.com](https://www.pge.com) and to pgealerts.alerts.pge.com, we ensure compliance with updated WCAG 2.1AA standards. We also seek to improve the customer experience with user testing for key components. Where possible, we remediate accessibility issues that customers or stakeholders have brought to our attention.

The following content was available on PG&E's PSPS updates pages or on links from those pages:

- Straightforward, simplified PSPS information available in 16 languages, with clear updates about the planned scope of the PSPS, including location (e.g., list of impacted Tribes, cities, and counties), duration of the PSPS, including estimated times of de-energization and re-energization at the individual address level, and overall, for the PSPS.
- PDFs of potentially impacted areas, shape and KMZ files for Public Safety Partners to use with their own mapping applications, and city/county lists with shutoff and restoration summaries.

- CRC details for the Merced County location were made available on pgealerts.alerts.pge.com when Merced County was in scope, along with four locations for visitors to obtain Grab and Go bags within the Merced, San Joaquin and Stanislaus counties. However, when the counties were descope, PG&E removed the information from the website mentioned above.
- Links to additional resources including Electric Vehicle (EV) charging location map, videos in ASL (American Sign Language), locations of ILCs, resources for customers with accessibility, financial, language, and aging needs, backup power safety tips, MBL program information, and more.
- Webpage, available in 15 non-English languages, that describes our language support services for customers during a PSPS at pge.com/pspslanguagehelp.
- Survey to provide input about the website and PSPS communications.
- Address look-up tool that a customer and the public could use to identify specific potential PSPS impacts.
- Address-level alerts, available in 15 non-English languages, that allow non-PG&E-account holders to receive notifications via a phone call or SMS text for any address where they do not receive a bill (e.g., workplace, child’s school, renters, mobile home parks, etc.). This is also a valuable communication tool for renters and tenants of master metered accounts, such as mobile home parks. See pgealerts.alerts.pge.com/outages/psps-address-alert and Figure 13 below.

Figure 13: PG&E PSPS Address Alert Sign-Up Webpage

Section 5.2 – Notification timeline including prior to de-energization, initiation, restoration, and cancellation, if applicable. The timeline should include the required minimum timeline and approximate time notifications were sent. (D.19-05-042, Appendix A, page A8-A9, D.21-06-034, page A11)

Response:

Table 4 describes notifications and the time the notification was sent in accordance with the minimum timelines set forth by the CPUC PSPS Phase 1 Guidelines,²⁵ to Tribal/Local Governments, Public Safety Partners, and all customers prior to de-energization, initiation, and restoration.

In accordance with Phase 1 and Phase 3 Guidelines, PG&E makes a substantial effort to provide notice of potential de-energization “whenever possible” and to the extent it is operationally feasible within the CPUC’s minimum timeline requirements.²⁶ Due to emergency weather

²⁵ D.19-05-042.

²⁶ D.19-05-042, D.21-06-034.

conditions, as explained in Section 2.3, PG&E took the appropriate steps to provide Priority Notifications to all impacted Public Safety Partners and transmission-level customers as soon as PG&E believed de-energization was likely. Although we were unable to issue Priority Notifications to Public Safety Partners 48-72 hours in advance of the forecasted de-energization time, we notified Public Safety Partners immediately following EOC activation and as soon as it became operation feasible in accordance with PSPS guidelines²⁷ at 21:45 PDT. See Table 4 below for notification timestamps.

Due to transmission impacts discovered during overnight and early morning modeling, 15,217 customers were added into scope on Friday, July 19, 2024, at 11:30 PDT, after the Watch Notifications (24-48 hour) window. In the afternoon of July 19, these customers received an incremental Watch Notification. Later that evening, when operational mitigation actions and improving weather were forecasted, PG&E was able to remove these customers from scope, and they received a cancellation notification within two hours of the decision to cancel.

Table 4: Customer Notification Timeline Summary

Event Order	Minimum Timeline ²⁸	Notification Sent to:	Approximate Time Sent (PDT)	Message	Notes	Who made the Notification	
Pre-De-energization (Prior)	72-48 hours	Public Safety Partners**	07/18/2024 9:46 PM	Priority		PG&E	
	48-24 hours	Public Safety Partners**	07/19/2024 9:23 AM	Watch		PG&E	
		All Customers***	07/19/2024 9:22 AM	Watch		PG&E	
	24-12 hours	Public Safety Partners**	07/19/2024 1:27 PM	Watch		PG&E	
		All Customers***	07/19/2024 1:27 PM	Watch		PG&E	
		Public Safety Partners**	07/19/2024 10:05 PM	Watch		PG&E	
		All Customers***	07/19/2024 10:06 PM	Watch		PG&E	
		4-1 hours	Public Safety Partners**	07/20/2024 8:07 AM	Warning		PG&E
			All Customers***	07/20/2024 8:08 AM	Warning		PG&E
	Initiation (During)	When de-Energization is initiated (Power Off)	Public Safety Partners**	07/20/2024 2:59 PM	Power Off		PG&E
Public Safety Partners**			07/20/2024 3:38 PM	Power Off		PG&E	
Public Safety Partners**			07/20/2024 3:53 PM	Power Off		PG&E	
Public Safety Partners**			07/20/2024 4:09 PM	Power Off		PG&E	

²⁷ D.19-05-042, D.21-06-034.

²⁸ D.19-05-042, Appendix A, Timing of Notification.

Event Order	Minimum Timeline ²⁸	Notification Sent to:	Approximate Time Sent (PDT)	Message	Notes	Who made the Notification
		Public Safety Partners**	07/20/2024 9:45 PM	Power Off		PG&E
		All Customers***	07/20/2024 2:59 PM	Power Off		PG&E
		All Customers***	07/20/2024 3:38 PM	Power Off		PG&E
		All Customers***	07/20/2024 3:53 PM	Power Off		PG&E
		All Customers***	07/20/2024 4:09 PM	Power Off		PG&E
		All Customers***	07/20/2024 9:45 PM	Power Off		PG&E
	Immediately before re-energization	Public Safety Partners**	07/20/2024 7:47 PM	Inspecting /Weather All-Clear		PG&E
		All Customers***	07/20/2024 7:47 PM	Inspecting /Weather All-Clear		PG&E
		Public Safety Partners**	07/20/2024 9:18 PM	Inspecting /Weather All-Clear		PG&E
		All Customers***	07/20/2024 9:18 PM	Inspecting /Weather All-Clear		PG&E
		Public Safety Partners**	07/21/2024 8:00 AM	ETOR Update		PG&E
		All Customers***	07/21/2024 8:00 AM	ETOR Update		PG&E
		Public Safety Partners**	07/21/2024 9:20 AM	ETOR Update		PG&E
		All Customers***	07/21/2024 9:20 AM	ETOR Update		PG&E
		Public Safety Partners**	07/21/2024 10:20 AM	ETOR Update		PG&E
		All Customers***	07/21/2024 10:20 AM	ETOR Update		PG&E
Restoration (After)	After re-energization was completed	Public Safety Partners**	07/20/2024 4:10 PM	Restore	First initial Restoration Notification sent.	PG&E
		Public Safety Partners**	07/20/2024 11:46 PM	Restore	Last Restoration Notification sent.	PG&E
		All Customers***	07/20/2024 4:10 PM	Restore	First initial Restoration	PG&E

Event Order	Minimum Timeline ²⁸	Notification Sent to:	Approximate Time Sent (PDT)	Message	Notes	Who made the Notification
					Notification sent.	
		All Customers***	07/20/2024 11:46 PM	Restore	Last Restoration Notification sent.	PG&E
Cancellation	Cancellation within 2-hours of decision to cancel	Public Safety Partners**	07/19/2024 9:15 PM	Cancel	Only Public Safety Partners removed from scope received the cancel notification. The decision to descope these customers was made at 8:49 PM PDT on 7/19/2024.	PG&E
		All Customers***	07/19/2024 9:15 PM	Cancel	Only Customers removed from scope received the cancel notification. The decision to descope these customers was made at 8:49 PM PDT on 7/19/2024.	PG&E
		Public Safety Partners**	07/20/2024 9:58 PM	Cancel	Only Public Safety Partners removed from scope received the cancel notification. The decision	PG&E

Event Order	Minimum Timeline ²⁸	Notification Sent to:	Approximate Time Sent (PDT)	Message	Notes	Who made the Notification
					to descope these customers was made at 9:27 PM on 07/20/2024.	
		All Customers***	07/20/2024 9:58 PM	Cancel	Only Customers removed from scope received the cancel notification. The decision to descope these customers was made at 9:27 PM PDT on 07/20/2024.	PG&E

*A subset of Public Safety Partners, including Tribes, cities, counties, and community choice aggregators

**A subset of Public Safety Partners, including water, wastewater, and communication service providers

***All Customers, including MBL program customers and SIV customers

Section 5.3 - For those customers where positive or affirmative notification was attempted, use the following template to report the accounting of the customers (which tariff and/or access and functional needs population designation), the number of notification attempts made, the timing of attempts, who made the notification attempt (utility or public safety partner) and the number of customers for whom positive notification was achieved. (D.19-05-042, Appendix A, page A23, SED Additional Information.)

“Notification attempts made” and “Successful positive notification” must include the unique number of customer counts. When the actual notification attempts made is less than the number of customers that need positive notifications, the utilities must explain the reason. In addition, the utilities must explain the reason of any unsuccessful positive notifications. (SED Additional Information.)

Response:

Table 5 below includes metrics associated with PG&E notifications provided to customers where positive or affirmative notification was attempted. PG&E interprets the number of customers that need positive or affirmative notification as customers the company seeks confirmation from, namely MBL program customers and SIV customers.

Table 5: Notifications to Customers where Positive or Affirmative Notification was Attempted²⁹

Designation	Total Number of customers ³⁰	Notification Attempts Made ³¹	Timing of Attempts ³² (PDT)	Who made the Notification Attempt	Successful Positive Notification ³³
MBL ³⁴	953	953 Watch Notifications	07/19/2024 9:22 AM	PG&E	889 Watch Notifications
		395 Warning Notifications	07/19/2024 1:45 PM		20 Warning Notifications
		1,348 Overall Notifications	07/19/2024 9:22 AM		909 Overall Notifications
MBL behind a master meter ³⁵	16	16 Watch Notifications	07/19/2024 9:23 AM	PG&E	14 Watch Notifications
		7 Warning Notifications	07/20/2024 8:09 AM		3 Warning Notifications
		23 Overall Notifications	07/19/2024 9:23 AM		17 Overall Notifications
SIV	84	84 Watch Notifications	07/19/2024 9:22 AM	PG&E	84 Watch Notifications
		39 Warning Notifications	07/20/2024 8:08 AM		7 Warning Notifications
		123 Overall Notifications	07/19/2024 9:22 AM		91 Overall Notifications

For this PSPS, MBL program customers and SIV customers received automated calls, texts, and emails at the same intervals as the general customer notifications. PG&E provided unique PSPS Watch and PSPS Warning Notifications to MBL program customers³⁶ and SIV customers.

²⁹ Counts of Notification Attempts Made will not reflect the actual total of customers notified as both MBL and SIV customers can appear in both subset groups.

³⁰ Total number of customers notified where notification was attempted. Count includes customers that may have been removed from scope or received Cancellation Notifications prior to de-energization, but still received Watch and/or Warning notifications.

³¹ Count of Warning Notifications includes doorbell rings and Live Agent phone calls.

³² Initial start time notification was sent.

³³ PG&E considers successful positive notifications as those in which the notification was successfully delivered to the customer (i.e., no bounce back) and the customer acknowledges receipt of the notification.

³⁴ Residential tenants of master-metered customers can also qualify for Medical Baseline quantities. The Medical Baseline category for the purposes of Table 5 does not include MBL program customers who are master meter tenants.

³⁵ PG&E has additional processes in place to ensure MBL customers are notified. Master meter tenants are contacted directly to be considered a positive notification. Contacting the property or building manager does not count as a positive notification.

³⁶ Including MBL program customers who are master-metered tenants (e.g., renters or tenants in mobile home park).

These customer groups also received additional calls and texts at hourly intervals until the customer confirmed receipt of the automated notifications by either answering the phone, responding to the text, or opening the email. If confirmation was not received, a PG&E representative visited the customer's home to check on the customer (referred to as the "doorbell ring" process) while hourly notification retries continued. If the customer did not provide confirmation to PG&E following the check-in, the PG&E representative left a door hanger providing additional PSPS notification and information at the home to indicate PG&E had visited. In each case, the additional door hanger notification was considered successful.³⁷

At times, PG&E also made Live Agent phone calls in parallel to the automated notifications and doorbell rings, as an additional attempt to reach the customer prior to and/or after de-energization.

PG&E shared the lists of the MBL program customers and SIV customers who had not confirmed receipt of their notifications with the appropriate county and Tribal emergency managers twice daily via the PSPS Portal. PG&E proactively notified agencies that the data was available on the PSPS Portal and encouraged them to inform these customers of the resources available to them. PG&E is unable to track and report on notifications made by Public Safety Partners, as notification systems and/or platforms used by Public Safety Partners are out of PG&E's purview; PG&E encourages Public Safety Partners to include PSPS messages on all of their platforms. PG&E describes its engagement with Public Safety Partners in Section 6.

Table 6 and Table 7 include metrics associated with the notifications to de-energized MBL program customers.

³⁷ For MBL program customers and SIV customers, the in-person door ring visit where a door hanger is left, but no contact made with the customer is considered "successful contact," but not confirmed as "received." If the representative makes contact with the customer, then it is considered "received."

Table 6: Outcomes of Notifications to De-energized Medical Baseline Program Customers

Count	Type of Notifications to De-energized MBL Customers ³⁸	Description
9	Total De-energized MBL Program Customers	The number of customers de-energized who participate in PG&E's MBL Program
9	Total Notifications Attempted / Sent	The total sum of automated notifications attempted via call, text, and e-mail, in-person doorbell ring visit attempts and/or Live Agent phone calls.
0	<i>Total Notifications Not Attempted / Sent</i>	<i>Total MBL program customers de-energized that PG&E did not attempt to notify.</i>
9	Total Notifications Delivered	The total sum of automated notifications sent via call, text, and e-mail.
0	<i>Total Notifications Not Delivered</i>	<i>Total MBL program customers de-energized whose notification was not delivered.</i>
4	Total Notifications Initially Acknowledged	The total sum of automated notifications sent via call, text, and email where notification was acknowledged.
16	Total In-Person Visits/Doorbell Rings and Live Agent Phone Calls	Total attempted doorbell ring for impacted MBL program customers where PG&E made contact with the customer (either in person or via phone call in advance of visit) or left a door hanger. ³⁹ This includes call attempts made by Live Agent representatives to MBL program customers that had not yet confirmed receipt of their automated notification or answered the door during PG&E's in-person visit. Refer to Table 7 for the detailed breakdown of this category.
9	Total Notifications Received	Customers who acknowledged their notification by taking one of the following actions: answered an automated or Live Agent phone call, responded to a text message, opened an e-mail, or greeted an in-person doorbell ring (excludes voicemails left, text message delivered only and not confirmed, door hanger left).
0	<i>Total Notifications Not Received</i>	<i>Total MBL program customers who did not confirm receipt / acknowledge their automated notifications, Live Agent phone calls or in-person doorbell ring. Customers who did not answer a doorbell ring were left a door hanger.</i>

³⁸ Based on SPID.

³⁹ Customers may have confirmed receipt of their notifications in multiple channels (e.g., automated notification and/or doorbell ring); therefore, the counts of total attempted and successful notifications are not mutually exclusive.

Table 7: Count and Type of Additional Notifications to De-energized Medical Baseline Program Customers

Count	Type of Additional Notifications to Impacted Medical Baseline Customers ⁴⁰	Description
6	Total In-Person Visits / Doorbell Rings	Doorbell ring attempts to impacted MBL program customers where PG&E made contact with the customer (either in person or via phone call in advance of visit) or left a door hanger. ⁴¹
10	Live Agent Phone Calls	Calls made by Live Agent representatives to MBL program customers that had not yet confirmed receipt of their automated notification or answered the door during PG&E's in-person visit.

⁴⁰ Based on SPID.

⁴¹ Customers may have confirmed receipt of their notifications in multiple channels (e.g., automated notification and/or doorbell ring); therefore, the counts of total attempted and successful notifications are not mutually exclusive.

Section 5.4 - A copy or scripts of all notifications with a list of all languages that each type of notification was provided in, the timing of notifications, the methods of notifications and who made the notifications (the utility or local public safety partners). (D.19-05-042, Appendix A, page A23, SED Additional Information.)

Response:

Please reference “*PGE_2024_PSPS_Notification_Scripts_20240720.pdf*” for a copy of the notification templates, the timing of the notifications and methods of notifications that PG&E sent during the July 20 – 21, 2024 PSPS. Additional information on notification timing can be found in Section 5.2.

PG&E provides Tribal, city, county, CCAs, Public Safety Partner, transmission-level customers, and municipal utility notifications in English only. All other customer notifications are delivered in-language if a customer’s language preference is on file. If there is no language preference on file, the notification is delivered in English, with information on how to get PSPS information in translated languages.

Seven non-English languages (Spanish, Chinese [Mandarin and Cantonese], Korean, Vietnamese, Hindi and Portuguese) were requested for this PSPS. For more information on notifications provided to customers in customer-set language preferences, see Table 12.

Section 5.5 - If the utility fails to provide notifications according to the minimum timelines set forth in D.19-05-042 and D.21-06-034, using the following template to report a breakdown of the notification failure and an explanation of what caused the failure. (D.21-06-014 page 286, SED Additional Information.)

Response:

PG&E makes a substantial effort to provide notifications whenever possible in accordance with PSPS Phase 1, Phase 3 and 2019 PSPS OII guidelines, weather and other factors permitting. The CPUC’s PSPS guidelines prescribes IOUs to provide advance notification and implement mitigation efforts to customers to the extent feasible, appropriate, and as soon as practicable, with priority notifications being sent to the appropriate entities, including Public Safety Partners.⁴² As discussed in Section 2.3 and Section 5.2, PG&E sent Priority Notification at 21:45 PDT to all impacted Public Safety Partners in scope, based on forecasted de-energization, as soon as the EOC activated for this PSPS, and was operationally feasible in accordance with PSPS guidelines.⁴³ Additionally, transmission impacts related to this PSPS were identified on July 19 and one transmission customer received Priority Notification at 22:00 PDT on July 19.

During this PSPS, two customers were unable to receive notifications as no valid contact information was provided by the customer to PG&E. These customers are not included in Table 8 below. Following the PSPS, PG&E will send these customers postcards and encourage them to update their contact information for future notifications.

⁴²D.19-05-042, D.21-06-034.

⁴³D.19-05-042, D.21-06-034.

Table 8: Notification Failure Causes

Notifications Sent to	Notification Failure Description	Number of Failures	Explanation of Failure
Public Safety Partners excluding Critical Facilities and Infrastructure⁴⁴	Entities who did not receive 48-to 72-hour priority notification	0 ⁴⁵	No failures.
	Entities who did not receive 24-to 48-hour watch notification	0	No failures.
	Entities who did not receive 4-to 24-hour warn notification	0	No failures.
	Entities who did not receive 1–4-hour imminent notification	0	No failures.
	Entities who did not receive any notifications before de-energization	0	No failures.
	Entities who were not notified immediately before re-energization	0	No failures.
	Entities who did not receive cancellation notification within two hours of the decision to cancel	0	No failures.
Critical Facilities and Infrastructure⁴⁶	Facilities who did not receive 48-to 72-hour priority notification	0 ⁴⁷	No failures.
	Facilities who did not receive 1–4-hour imminent notification	0	No failures.
	Facilities who did not receive any notifications before de-energization	0	No failures.
	Facilities who were not notified at de-energization initiation	1	This transmission-level facility was not notified at de-energization initiation and when re-energization was complete, due to a human error on a manual process.
	Facilities who were not notified immediately before re-energization	0	No failures.
	Facilities who were not notified when re-energization is complete	1	This transmission-level facility was not notified at de-energization

⁴⁴ Only includes Tribes, cities, counties, and CCAs.

⁴⁵ 48-72-hour notifications were sent shortly after EOC activation. See Section 5.2 and 5.5 for additional detail.

⁴⁶ Includes Public Safety Partners who are critical facilities and infrastructure customers.

⁴⁷ 48-72-hour notifications were sent shortly after EOC activation. See Section 5.2 and 5.5 for additional detail.

Notifications Sent to	Notification Failure Description	Number of Failures	Explanation of Failure
			initiation and when re-energization is complete, due to human error on a manual process.
	Facilities who did not receive cancellation notification within two hours of the decision to cancel	0	No failures.
All other affected customers	Customers who did not receive 24–48-hour priority notifications	0	No failures.
	Customers who did not receive 1–4-hour imminent notifications	0	No failures.
	Customers who did not receive any notifications before de-energization	0	No failures.
	Customers who were not notified at de-energization initiation	1 (no MBL)	This customer was impacted by a data error that caused them to miss all post-outage notifications. This issue was resolved with a mapping correction.
	Customers who were not notified immediately before re-energization	1 (no MBL)	This customer was impacted by a data error that caused them to miss all post-outage notifications. This issue was resolved with a mapping correction.
	Customers who were not notified when re-energization is complete	1 (no MBL)	This customer was impacted by a data error that caused them to miss all post-outage notifications. This issue was resolved with a mapping correction.
	Customers who did not receive cancellation notification within	0	No failures.

Notifications Sent to	Notification Failure Description	Number of Failures	Explanation of Failure
	two hours of the decision to cancel		

Section 5.6 - Explain how the utility will correct the notification failures. (*D.21-06-014, page 286.*)

Response:

We have reviewed the notification failures for this PSPS and have identified or are in the process of identifying corrective actions as discussed in Table 8.

Section 5.7 - Enumerate and explain the cause of any false communications citing the sources of changing data. (*D.20-05-051, Appendix A, page 4.*)

Response:

Explanation of No De-energization after receiving a De-energization Notification

One transmission-level facility was notified of de-energization but was not de-energized. This facility was incorrectly planned for de-energization because of a mapping error present in both the customer database and the transmission system data. This error has been corrected.

Section 6 – Local and State Public Safety Partner Engagement

Section 6.1 - List the organization names of public safety partners including, but not limited to, local governments, tribal representatives, first responders and emergency management, and critical facilities and infrastructure the utility contacted prior to de-energization, the date and time on which they were contacted, and whether the areas affected by the de-energization are classified as Zone 1, Tier 2, or Tier 3 as per the definition in CPUC General Order 95, Rule 21.2-D. (*Resolution ESRB-8, page 5, SED Additional Information.*)

Response:

Please see Appendix D for a list of Public Safety Partners including Tribal representatives, local governments, first responders and emergency management, and critical facilities notified with the date and time of the initial notification, and whether the areas affected by the de-energization are classified as Zone 1, Tier 2, or Tier 3.

As stated in our [2023 Safety Outage Decision Making Guide](#), we use a HFRA classification which PG&E utilizes in addition to HFTD to determine PSPS scope. In Appendix D, we begin by identifying HFTD area assigned to Public Safety Partners. Any area outside of HFTD is re-classified. PG&E's circuits can run miles long and span across multiple jurisdictions. Some Public Safety Partners outside of HFRA and HFTD were included in potentially impacted scope in order to de-energize areas within HFRA and HFTD for safety.

Section 6.2 - List the names of all entities invited to the utility's Emergency Operations Center for a PSPS event, the method used to make this invitation, and whether a different form of communication was preferred by any entity invited to the utility's emergency operation center. (*D.21-06-014, page 289.*)

Response:

PG&E invited the CPUC via email to virtually embed in the EOC for the duration of the activation on July 18, 2024, at 18:49 PDT.

PG&E also provides communication service providers a dedicated PG&E contact in the EOC known as the CIL, who shares PSPS updates and answers specific questions. They can reach the CIL 24/7 during a PSPS by e-mail or phone at PG&E's Business Customer Service Center.

As part of our PSPS Pre-Season outreach,⁴⁸ PG&E provides water infrastructure and communication service providers in PG&E's electrical service area with information on how to request representation at PG&E EOC's. Alternatively, some partners may also request PG&E representation at their jurisdiction's activated Operations Emergency Center (OEC).⁴⁹

⁴⁸ See [2024 PSPS Pre-Season Report](#), pp 70-71.

⁴⁹ D.19-05-042.

Section 6.3 - A statement verifying the availability to public safety partners of accurate and timely geospatial information, and real time updates to the GIS shapefiles in preparation for an imminent PSPS event and during a PSPS event. (D.21-06-014, page 289.)

Response:

In preparation for a potential PSPS, PG&E sent automated notifications with links to the PSPS Portal, which provides PDF maps and GIS data to Public Safety Partners at the times outlined in Table 9. In addition, when PDF maps and GIS data were updated on the PSPS Portal due to scope changes, Portal users were notified via e-mail at the times outlined below in Table 8.

After the EOC was activated, PDF maps and GIS data on the PSPS Portal were accurate and updated in a timely manner following changes to geographic scope or customer impacts.

Table 9: PSPS Portal Time & Date for Map Sharing

Date	Time PDF and GIS Maps Shared
07/18/2024	21:27 PDT
07/19/2024	8:18 PDT
07/19 /2024	12:48 PDT
07/19/2024	21:00 PDT
07/19/2024	4:55 PDT
07/20/2024	21:38 PDT

Section 6.4 - A description and evaluation of engagement with local and state public safety partners in providing advanced outreach and notification during the PSPS event. (D.19-05-042, Appendix, page A23.)

Response:

Below is a description of the engagement with state (CPUC, Cal OES, CAL FIRE [California Department of Forestry and Fire Protection]) and local (i.e., counties, cities) Public Safety Partners:

- Submitted the PSPS Notification Form to Cal OES twice a day (07:00 PDT and 15:00 PDT), if there was a significant change to scope and at least once for each of the five PSPS stages: Activating PSPS Protocols/Potential to De-energize (Stage 1), Decision to De-energize (Stage 2), De-energization Initiated (Stage 3), Initiating Re-energization Patrols (Stage 4) and All PSPS Lines Re-energized (Stage 5). See Table 10 below.

Table 10: PSPS Notifications Submitted to Cal OES

Date	Time PDF and GIS Maps Shared
07/18/2024	20:14 PDT
07/19/2024	07:20 PDT
07/19/2024	13:09 PDT
07/19/2024	15:24 PDT
07/19/2024	21:08 PDT
07/20/2024	06:53 PDT

07/20/2024	15:17 PDT
07/20/2024	15:54 PDT
07/20/2024	20:06 PDT
07/20/2024	21:29 PDT
07/21/2024	07:18 PDT
07/21/2024	10:37 PDT

- Sent e-mails to the CPUC at least once for each of the five PSPS stages listed above. See Table 11 below.

Table 11: PSPS Notifications Submitted to Cal CPUC

Date	Time PDF and GIS Maps Shared
07/18/2024	18:49 PDT
07/19/2024	21:30 PDT
07/20/2024	08:30 PDT
07/20/2024	15:13 PDT
07/20/2024	16:03 PDT
07/20/2024	20:13 PDT
07/20/2024	22:06 PDT
07/20/2024	22:25 PDT
07/20/2024	22:29 PDT
07/20/2024	22:52 PDT
07/21/2024	10:54 PDT

- Hosted daily State Executive Briefings with Cal OES, CPUC, CAL FIRE, Governor's Office, U.S. Forest Service, and other state agencies invited to provide the latest PSPS information and answer questions. A deck with key PSPS information was also provided to participants.
- Hosted the daily Systemwide Cooperators Call, where all Public Safety Partners in the service area were invited to join for situational awareness.
- Hosted Operational Areas Cooperators Communication Calls to provide situational awareness updates and answer questions.⁵⁰
- Conducted ongoing coordination with local County OES contacts through dedicated Agency Representatives. This includes but is not limited to providing the latest PSPS information and resolving local issues in real-time.
- Provided links to the PSPS Portal that included planning and event-specific maps, situation reports, critical facility lists and MBL program customer lists at each notification and when scope changed. Note that the Situation Report was provided twice a day and at scope changes prior to de-energization and hourly once restoration began.
- Sent automated and live call notifications to agency partners before, during and after de-energization.
- Offered local and state agencies to be embedded in PG&E's EOC, as well as offered PG&E Agency Representatives to be embedded virtually in local EOCs.
- A dedicated State Operations Center Agency Representative provided ongoing support to Cal OES to ensure all questions were addressed.

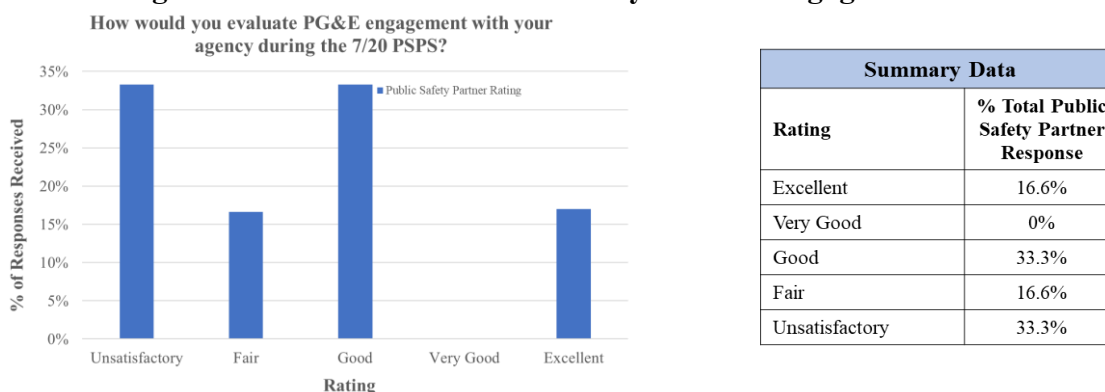
⁵⁰ May vary in cadence & type based on County OES.

PG&E considers the advanced outreach and notification to state and local Public Safety Partners during this EOC activation successful but with minor improvements needed. This is based on the number and various types of outreaches conducted (see list above), the feedback received from Public Safety Partners through the post-PSPS survey and the success rate of automated agency notifications. Of the responses given, PG&E received the following positive comments from in-scope Public Safety Partners regarding PSPS outreach:

- “Communication with my agency rep is always outstanding. I received several updates daily.”
- “I appreciate the advanced notification and continuous communication throughout the event.”

Leading up to potential de-energization, we sent 100% of our automated notifications to local governments within the required timeframes whenever possible. Figure 14 below shows the post-PSPS survey results when Public Safety Partners were asked to “evaluate PG&E engagement with your agency during the outage.” Note that we received six responses to the survey. PG&E will continue to refine the agency notification process to ensure accurate and timely information sharing.

Figure 14: Evaluation of Public Safety Partner Engagement



Section 6.5 - Specific engagement with local communities regarding the notification and support provided to the AFN community. (D.20-05-051, Appendix A, page 8, SED Additional Information)

Response:

To ensure PG&E provides adequate support to AFN communities, we engage with local communities through paratransit agencies, media partnerships, and CBOs to share coordination efforts, notifications plans, CRC information, PSPS-specific information and more. See below for details on this engagement.

Engagement with Paratransit Agencies

- In accordance with the Phase 3 Guidelines,⁵¹ PG&E provided proactive notifications and impacted zip code information to paratransit agencies that may serve all the known transit- or paratransit-dependent persons that may need access to a CRC

⁵¹ D.21-06-034.

during the PSPS.⁵² PG&E provided proactive notifications⁵³ to 134 paratransit agencies for the July 20 – 21, 2024, PSPS. All notifications included a link to the PSPS emergency website updates page, pge.com/pspsupdates and a section called “Additional Resources” with a link to a map showing areas potentially affected by a shutoff.

Community Engagement

- We engaged with over 509 “information-based” CBOs during the PSPS, sharing courtesy notification updates, fact sheets, and other relevant information that they could share with their constituents to expand our reach of communications, including infographic videos with relevant PSPS updates in 16 languages and ASL that the organizations could use to educate their consumers.
- CBO resource partners were invited to the daily cooperator calls for Public Safety Partners, which was hosted by members from PG&E’s EOC who provided a situational update about the latest scope of the PSPS and an overview of the services available to customers. We hosted additional daily coordination calls with the CBO resource partners supporting the PSPS to provide an open forum to answer questions, offer suggestions regarding how they can best support their consumers, and facilitate more localized coordination among the partners.

Programs/Support for AFN Customers

PG&E provided a variety of resources to AFN customers before and during this PSPS. These resources include:

- Disability Disaster Access and Resource Program (DDAR):⁵⁴ We continued our collaboration with the California Foundation for Independent Living Centers (CFILC) to Independent Living Center implement the DDAR Program for the potential PSPS. Through DDAR, we have supported AFN customers with the delivery of backup portable batteries (since July 2020) to qualifying customers who need power during a PSPS. Through DDAR, PG&E provided the following resources for the July 20-21, 2024 PSPS.
 - Six local (ILCs) provided aid to 153 customers who rely on power for medical or independent living needs. PG&E is evaluating intervenor comments regarding how the ILCs aided customers reliant on power and will update the [2024 AFN Plan](#) accordingly.
 - 216 batteries were previously distributed in affected counties, and two batteries were delivered during the activation to potentially impacted customers. PG&E is evaluating intervenor comments regarding engagement with customers and battery delivery requests through DDAR and will update the [2024 AFN Plan](#) accordingly.
- Portable Battery Program (PBP):⁵⁵ Our PBP provides free portable battery systems for customers who live in Tiers 2 and 3 HFTDs and are enrolled in the MBL Program. For this PSPS, no customers in scope were supported by batteries received through the PBP (delivered in 2020, 2021, and year-to-date 2022). Since July 2020, a

⁵² No CRCs were opened for the July 20-21, 2024, PSPS.

⁵³ For this PSPS, paratransit agencies received the Watch, Warning, Cancellation, and Restoration Notification. Six iterations of the list of zip codes were provided.

⁵⁴ For more information on the types of aid ILCs provided and how the delivery of aid was coordinated among DDAR, ILCs and the customers, refer to [PG&E’s 2024 AFN Plan](#).

⁵⁵ For more information about the PBP Program, refer to [PG&E’s 2024 AFN Plan](#).

- total of approximately 24,066 battery units have been delivered through the PBP across the entire PG&E service area.
- **Food Bank Partnerships:** We provided funding for local food banks to provide food replacement to families during the PSPS and three days following service restoration. For this PSPS, we partnered with six local food banks⁵⁶ that serve six of the six impacted counties to provide boxes of food replacement for families.
 - **Meals on Wheels Partnerships:** We continued our partnership with Meals on Wheels to provide additional support and services to customers in need during PSPS outages. For this PSPS, we partnered with six Meals on Wheels Organizations⁵⁷ that would be able to provide services to customers in scope for the de-energization in six counties.
 - **211 Referral Services:** PG&E has a long-standing relationship with 211 through our charitable grant program. As of August 13, 2021, PG&E has a partnership with the California network of 211s to connect customers with resources before, during, and after PSPS outages. For this PSPS, PG&E worked with 211 to assist one customer with resources.⁵⁸
 - **Accessible Transportation Partnerships:** We partner with Accessible Transportation organizations to provide customers with transportation to and from PG&E's CRCs. For this PSPS, we successfully partnered with one organization in preparation for the possibility of any transportation needs.⁵⁹

Communications to Customers with Limited English Proficiency

- PG&E provided translated customer support through its customer notifications, website, call center, social media and engagement with CBOs, and multicultural media partnerships. Customers with their language preference set, received in-language (translated) notifications. For customers with no language preference set, notifications were provided in English with information on how to get PSPS information in 15 non-English languages. See language preferences for this PSPS in Table 12 below.

Table 12: Customer Notifications Based on Language Preference

Language	Total Notifications ⁶⁰	Percent
English	311,741	97.34%
Spanish	8,218	2.57%
Chinese (Mandarin & Cantonese)	168	0.05%
Korean	60	0.02%
Vietnamese	48	0.02%
Hindi	24	0.01%
Portuguese	18	0.01%
Total	320,277	100.00%

⁵⁶ Local Food Banks PG&E partnered for this PSPS: Alameda County Food Bank, Food Bank of Contra Costa & Solano, Central California Food Bank, Merced County Food Bank, Community Food Bank of San Benito, Second Harvest Food Bank San Joaquin & Stanislaus.

⁵⁷ Meals on Wheels Organizations that PG&E Partnered for this PSPS: Service Opportunity for Seniors, J-Sei (Alameda County), Life ElderCare, Spectrum Community Services, Meals on Wheels Diablo Region, J-Sei (Contra Costa County), West Contra Costa Meals on Wheels.

⁵⁸ Additional information on 211s is not available within the PSPS Post-Event Report timeline. More information will be available in the [2024 AFN Plan](#).

⁵⁹ PG&E partnered with Fresno Economic Opportunities Commission during this PSPS.

⁶⁰ Total notifications do not include doorbell rings and Live Agent phone calls.

- Customers with limited English proficiency have access to translation phone numbers on our PSPS website, highlighting that translation services are available in over 200 languages. Table 13 includes call center-related metrics associated with this PSPS.

Table 13: Call Center Support Services⁶¹

Total Calls Handled	PSPS Calls Handled	Average Response Time for PSPS-related Calls (seconds)	Number of calls handled by Call Center Translation Services	Number of languages Supported by Call Center Translation Services
28,641	509	43	789	240

- PG&E continued support and engagement with multi-cultural media organizations and in-language CBOs to maximize the reach of in-language communications to the public. Prior to the PSPS, we reached out to 28 multicultural media organizations and 28 CBOs providing language outreach. These organizations covered the translated languages above and languages spoken by communities that occupy significant roles in California's agricultural economy (e.g., Nahuatl). Additionally, we shared information and updates on PSPS with these media outlets, including news releases and social media infographics in English, translated languages and ASL, for their use and distribution. We also shared our new PSPS Language Resources page (www.pge.com/pspslanguagehelp), available in 16 languages, with organizations to share with their constituents. Highlights from our coordination with multicultural media organizations and CBOs during this PSPS includes coverage from News for Chinese in the Bay Area in Chinese. See Figure 15 below.⁶²

Figure 15: Local News for Chinese



⁶¹ Metrics are provided from July 18, 2024, through July 21, 2024.

⁶² 7/20 – 7/21 PSPS Coverage – [Local News for Chinese](http://www.pge.com/pspslanguagehelp).

Section 6.6 - Provide the following information on backup power (including mobile backup power) with the name and email address of a utility contact for customers for each of the following topics: (D.21-06-014, page 300.)

Response:

The information requested is included in Sections 6.6a – 6.6f. For questions related to backup power, customers can email TempGenPSPSSupport@pge.com.

Section 6.6a. Description of the backup generators available for critical facility and infrastructure customers before and during the PSPS.

Response:

Table 14 lists the generators available for critical facility and infrastructure customers before and during the PSPS.

Table 14: Generators Available for Critical Facilities and Infrastructure Customers

Generator Type	Number of Units	Individual Size (MW)	Run Time (Hrs.) ⁶³	Description
Diesel Generator	3	.032	31	3 units on reserve in Sacramento
Diesel Generator	1	.065	31	1 unit on reserve in San Leandro
Diesel Generator	1	.07	31	1 unit on reserve in Sacramento
Diesel Generator	8	.1	27	8 units on reserve in Sacramento
Diesel Generator	2	.125	24	2 units on reserve in San Leandro
Diesel Generator	9	.2	24	8 units on reserve in San Leandro; 1 unit on reserve in Sacramento
Diesel Generator	3	.275	22	3 units on reserve in Sacramento
Diesel Generator	2	.570	24	2 units on reserve in San Leandro
Diesel Generator	2	1.5	10	2 units on reserve in Benecia

⁶³ Estimated based on a 75% load. Barring mechanical failure and refueling the temporary generators have the ability to operate continuously throughout a typical PSPS.

Generator Type	Number of Units	Individual Size (MW)	Run Time (Hrs.) ⁶³	Description
Diesel Generator	8	1.0	31	5 units on reserve at Sacramento; 3 units pre-staged at ICU Hospital
Diesel Generator	6	1.140	22	6 units on reserve in San Leandro
Diesel Generator	1	2.0	35	1 unit on reserve in Sacramento

6.6b. The capacity and estimated maximum duration of operation of the backup generators available for critical facility and infrastructure customers before and during the PSPS.

Response:

Table 14 lists the power capacity and maximum duration of operation of the generators available for critical facility and infrastructure customers before and during the PSPS.

6.6c. The total number of backup generators provided to critical facility and infrastructure customer's site immediately before and during the PSPS.

Response:

Immediately before and during the PSPS, two backup generators were activated to energize the critical facility and infrastructure customers that did not have an existing mitigation in place.

6.6d. How the utility deployed this backup generation to the critical facility and infrastructure customer's site.

Response:

As a general policy, PG&E does not offer backup generation to individual facilities. However, PG&E may grant exceptions for critical facilities when a prolonged outage could have a significant adverse impact to public health or safety.

Deployment of temporary generation is contingent upon the following circumstances: expected duration to perform permanent repairs is significantly longer than the expected duration to install backup generation, the expected customer outage is 50,000 or more customer minutes, and the outage affects a distribution circuit serving multiple customers without a functional back-tie.⁶⁴

PG&E has pre-arranged commitments with critical facility and infrastructure customers to provide temporary generation in case of a PSPS and evaluated requests received during the PSPS according to the prioritization described in Section 6.6e.

⁶⁴ 50,000 customer minutes is approximately equivalent to 100 customers for about 8 hours.

6.6e. An explanation of how the utility prioritized how to distribute available backup generation.

Response:

PG&E prioritizes the deployment of available generation by first meeting existing commitments to individual facilities in the following order.

- Intensive care unit (ICU) hospitals, pre-identified by PG&E in partnership with the California Hospital Association (CHA) and Hospital Council of Northern and Central California (HC).
- Pandemic Response sites classified as medical stations and shelters.
- Additional facilities prepared to support public safety such as but not limited to First/emergency responders at the Tribal, local, state, and federal level, water, wastewater, and communication service providers, affected community choice aggregators, publicly owned utilities/electrical cooperatives, the CPUC, the California Governor’s Office of Emergency Services and the CAL FIRE.⁶⁵

Deployment of available generation is then followed by customers with special needs in the following order:

- Life support, MBL, and temperature sensitive
- Large customers, economic damage customers, and danger to health and safety customers

Deployment of available generation is then followed by other customers based on maximizing relief based on the number of customers times expected duration.

6.6f. Identify the critical facility and infrastructure customers that received backup generation.

Response:

During this PSPS, PG&E utilized its rental fleet of temporary generators to mitigate the impacts of PSPS on its customers. This fleet was used to support two stand-alone facilities serving public safety.

Critical facility and infrastructure customers that received backup generation are listed in Table 15.

Table 15: CFI Customers Energized with Backup Generation

County	Site Type	Generation Deployed (MW)	Duration of Operation	Reason Deployed
Contra Costa	Byron Airport	.20	4 hours 50 minutes	Public Safety – airport cannot operate without their fire suppression system.
Contra Costa	Byron Airport	.10	5 hours 5 minutes	Public Safety – airport cannot operate without their fire suppression system.

⁶⁵ The term “emergency response providers” includes federal, state, and local governmental and non-governmental public safety, fire, law enforcement, emergency response, emergency medical services providers (including hospital emergency facilities), and related personnel, agencies, and authorities.

Section 7 – Complaints & Claims

Section 7.1 - The number and nature of complaints received as the result of the de-energization event and claims that are filed against the utility because of de-energization. The utility must completely report all the informal and formal complaints, meaning any expression of grief, pain, or dissatisfaction, from various sources, filed either with CPUC or received by the utility as a result of the PSPS event. (Resolution ESRB-8, page 5, D.21-06-014, page 304.)

Response:

Complaints received during the July 20-21, 2024 PSPS are provided in Table 16 below. There were no claims filed against PG&E for this PSPS as of July 25, 2024.

Table 16 provides the number and nature of complaints received from customers and Public Safety Partners, submitted to both the CPUC and PG&E, for the July 20 – 21, 2024 PSPS. Any complaints received after July 20 – 21, 2024, PSPS for this PSPS will be included in the 2024 PSPS Post-Season Report.⁶⁶

Table 16: Number and Nature of Complaints due to the July 20 – 21, 2024 PSPS

Nature of Complaints	Number of Complaints
Communications/Notifications Including, but not limited to complaints regarding lack of notice, excessive notices, confusing notice, false alarm notice, problems with getting up-to-date information, inaccurate information provided, not being able to get information in the prevalent languages and/or information accessibility, complaints about website, Public Safety Partner Portal, Representational State Transfer (REST)/Digital Asset Manager (DAM) sites (as applicable).	6
PSPS Frequency/Duration Including, but not limited to complaints regarding the frequency and/or duration of PSPS, including delays in restoring power, scope of PSPS and dynamic of weather conditions.	9
Safety/Health Concern Including, but not limited to complaints regarding difficulties experienced by AFN/MBL populations, traffic accidents due to non-operating traffic lights, inability to get medical help, well water or access to clean water, inability to keep property cool/warm during outage raising health concern.	13
General PSPS Dissatisfaction/Other Including, but not limited to complaints about being without power during PSPS and related hardships such as food loss, income loss, inability to work/attend school, plus any PSPS-related complaints that do not fall into any other category.	32
Outreach/Assistance Including, but not limited to complaints regarding CRCs, community crew vehicles, backup power, hotel vouchers, other assistance provided by utility to mitigate impact of PSPS.	2

⁶⁶ PG&E Post-Event Reports are based on the CPUC template. Additional information regarding complaints and claims will be provided in the PSPS Post-Season Report.

Section 8 – Power Restoration

Section 8.1 - A detailed explanation of the steps the utility took to restore power (*Resolution ESRB-8 page 5*)

Response:

During the PSPS, the PG&E Incident Command and meteorology teams monitor real-time and forecasted weather conditions based on weather models, weather station data, and field observations while patrol crews and helicopters are pre-positioned in anticipation of the Weather “All-Clear” to begin patrols. Weather “All-Clears” are called based on pre-defined, geographic areas and mapping of each weather station in each zone to that area. This is known as the All-Clear Zone methodology, which based on past PSPS outages, was an improvement compared to issuing Weather “All-Clear” by FIAs.

All-Clear Zones align with known meteorological phenomena, such as mountain tops and wind gaps which may experience longer periods of extreme weather. This allows for further granularity in calling Weather “All-Clears,” thereby helping areas less prone to wind gusts or adverse conditions to be cleared and restored more quickly. PG&E monitors the conditions in each of these All-Clear Zones and as they fall below our minimum fire potential conditions, the PG&E meteorologists recommend areas for restoration.

For this PSPS, TP 5 was not included in the pre-defined geographic areas or All-Clear Zone. This TP was scoped for PSPS and de-energized due to additional Catastrophic Fire Behavior risk factors identified that may have led to a catastrophic wildfire.

Figure 16: Map of FIA & TPs De-energized for July 20 – 21, 2024, PSPS



As Weather “All-Clears” are issued, restoration crews patrol electrical facilities to identify and repair or clear any damage or hazard before re-energizing. Using the Incident Command System (ICS) as a base response framework, each circuit is assigned a taskforce consisting of supervisors, crews, trouble men, and inspectors. This structure allows PG&E to patrol and perform step restoration in alignment with the centralized control centers.

During restoration, PG&E issued two Weather “All-Clears,” deployed approximately 33 personnel and nine helicopters to patrol the lines in advance of restoration. Patrols were

conducted on approximately 52 miles of distribution circuits and 48 miles of transmission lines that had been de-energized. Power was restored to customers as patrol completion verified the safe condition of each line.

Section 8.2 - The timeline for power restoration, broken down by phase if applicable (*D.19-05-042, Appendix A, page A24, SED Additional Information.*)

Response:

PG&E issued Weather “All-Clears” for All-Clear Zones at the times noted in Table 17.

Table 17: Weather All-Clear Times

All-Clear Zones	Weather All-Clear Date and Time
TP-05	07/20/2024 19:30 PDT
530A (TP-04)	07/20/2024 20:40 PDT

Section 8.3 - For any circuits that require more than 24 hours to restore, the utility shall explain why it was unable to restore each circuit within this timeframe. (*D.20-05-051, Appendix A, page 6.*)

Response:

PG&E was able to restore all impacted circuits within 24 hours of the Weather All-Clear.

Section 9 – Community Resource Centers

Section 9.1 - The address of each location during a de-energization event, the location (in a building, a trailer, etc.), the assistance available at each location, the days and hours that it was open, and attendance (i.e., number of visitors) (*Resolution ESRB-8, page 5, SED Additional Information.*)

Response:

During the July 20 – 21, 2024 PSPS, PG&E did not open CRCs due to descope of impacted areas. Additionally, Alameda, Contra Costa, Fresno, Napa, San Benito, San Joaquin, and Stanislaus counties declined to have CRCs set up due to relatively low customer impact. Plans to open a CRC in Merced County were underway but cancelled, in agreement with the county, prior to opening as the area was descope.

Additional information about our CRC operations, including coordination with Tribal and local governments, CRC types and resources, and more is available in the [2024 PSPS Pre-Season Report CRC Plan \(Appendix A\), pp. 51-61](#).

Section 9.2 - Any deviations and explanations from the CRC requirement including operation hours, ADA accessibility, and equipment. (*SED Additional Information.*)

Response:

In agreement with impacted counties, CRCs were not opened for the July 20 –21, 2024 PSPS. Grab and Go bags were offered to Merced, San Joaquin, and Stanislaus counties, however, after these areas were descope, plans to provide these bags were cancelled, per agreement with the counties.

Section 9.3 - A map identifying the location of each CRC and the de-energized areas (*SED Additional Information.*)

Response:

Due to descope and in agreement with the impacted counties, PG&E did not open CRCs, therefore, Section 9.3 is not applicable.

During a PSPS, CRC location information can be found at [PG&E Emergency Site – View Outage Map](#). Customers can find specific information using the ‘Address Search’ or ‘City/County Search’ functions.

Section 10 – Mitigations to Reduce Impact

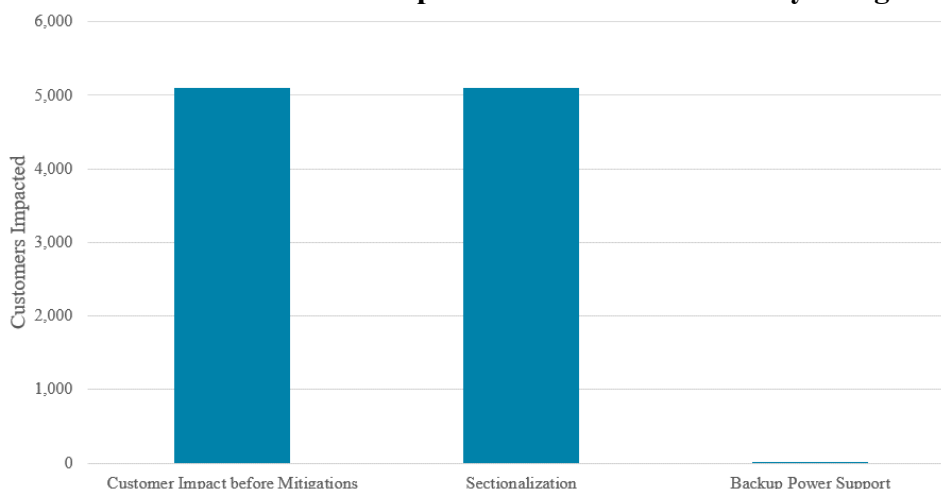
Section 10.1 - Mitigation actions and impacts (both waterfall graph and map) including: sectionalization devices, temporary generation, microgrids, permanent backup generation, transmission switching, covered conductor, and any other grid hardening that mitigated the impact of the event (D.21-06-014, page 285, SED Additional Information.)

Response:

Mitigations to Reduce Impact

PG&E employed mitigation measures to avoid de-energizing approximately 5,031 customers. Figure 17 depicts the impact each mitigation measure had on the total number of customers.

Figure 17: Reduction in Number of Impacted Customers Driven by Mitigation Efforts



Community Microgrids

A community microgrid is a group of customers and Distributed Energy Resources (DERs) within clearly defined electrical boundaries with the ability to disconnect from and reconnect to the grid. These microgrids are typically designed to serve the portions of communities that include community resources, like hospitals, police and fire stations, and gas stations and markets. PG&E continues to own and operate the distribution system within the microgrid. More information about PG&E's microgrid solutions or how to begin developing a community microgrid can be found at www.pge.com/cmep. Community microgrids were not utilized during this PSPS.

Transmission Line Segmentation

Transmission lines are segmented using switches enabled with Supervisory Control and Data Acquisition (SCADA), when possible, if only a portion of a line is required to be de-energized due to PSPS. Leaving segments of transmission lines energized allows PG&E to still reduce fire risk where needed and provide service to stations fed off the non-impacted segments during the PSPS. Transmission line segmentation was not utilized during this PSPS.

Distribution Switching

Depending on fire risk patterns, distribution switch locations and switching plans maintain service to customers on lines that fall outside the high-risk area but are served by lines that pass through the fire risk area. Depending on PSPS scope, we may be able to use back-tie switching

to bypass the distribution circuits that pass through the de-energization area to keep customers energized from a different set of lines. During this PSPS, distribution switching was not used as a mitigation as there were no opportunities available. This was primarily due to the small scope of the PSPS.

Sectionalization

PG&E has installed new sectionalization devices near the borders of the CPUC-designated Tier 2 and three HFTDs to reduce the number of customers affected by PSPS outages. PG&E used sectionalization devices on four circuits which reduced the customer impact by approximately 5,029 customers for this PSPS.

Islanding

In some cases, PG&E can leverage islanding capabilities to keep some customers islanded apart from the rest of PG&E's transmission system and energized by generation located within the island. During this PSPS, there were no islanding opportunities in scope for energization.

Temporary Microgrids

The objective of temporary microgrids is to enable some community resources to continue serving the surrounding population during PSPS outages where it is safe to do so, using pre-installed interconnection hubs to safely and rapidly interconnect temporary generation. PG&E temporary distribution microgrids were not in scope for this PSPS.

While temporary microgrids do not often support large numbers of customers, the community resources served by temporary microgrids include fire stations, local water and waste companies, markets, post offices, and medical facilities. On average, when utilized, customers served by temporary microgrids experience de-energization periods of under 30 minutes for the switch-over from grid to microgrid and go-back from microgrid to the grid.

Eight temporary microgrid sites are currently ready for immediate operation in PG&E's service area and others are in development.

Backup Power Support:

PG&E used temporary generation to support two stand-alone customers. Table 14 lists the facilities that received backup power support during the July 20 – 21, 2024 PSPS.

Covered Conductor:

The effects of grid-hardening and covered conductors are accounted for in our IPW model, which predicts the probability of utility-caused ignitions. Overhead system hardening is expected to reduce the probability of outages and ignitions in recently hardened sections. The IPW model more heavily weighs ignition and outage rates in recent years which will result in areas with fewer ignitions (e.g., areas that may have been recently hardened, being less likely to be de-energized for PSPS as there is a lower chance of ignition based on historical ignitions and outages).

Section 11 – Lessons Learned from this Event

Section 11.1 - Threshold analysis and the results of the utility’s examination of whether its thresholds are adequate and correctly applied in the de-energized areas. (D.21-06-014, page 305-306.)

Response:

This section addresses our examination of the adequacy of our PSPS protocols and guidance thresholds. As prescribed in ESRB-8, the decision to de-energize electric facilities for public safety is based on the best judgment of the IOU and is dependent on many factors including and not limited to fuel moisture; aerial and ground firefighting capabilities; active fires that indicate fire conditions; situational awareness provided by agencies; and local meteorological conditions of humidity and winds.⁶⁷ Based on our current PSPS modeling and thresholds, as applied in this PSPS and explained in Section 2, we believe our current PSPS thresholds continue to be adequate and were correctly applied for the July 20 – 21, 2024 PSPS. See Appendix A for detailed information on our PSPS criteria and thresholds

PG&E begins its threshold evaluation with a robust historical analysis that is described in detail below. This established the guidance values to be applied for PSPS, which has been optimized to capture data from past catastrophic fires to mitigate customer impacts. To do so, Meteorologists use internal and external tools and subject matter expertise for decision making.

Typically, before de-energization, the PSPS customer risk is also evaluated against the wildfire risk on a per circuit basis to further evaluate the adequateness of the PSPS. And, during the PSPS, the advanced weather modeling systems from our network of more than 1,300 weather stations forecasts and tracks weather conditions in real time. Finally, data and post-PSPS analysis results are collected and provided as part of the PSPS Post-Event Report.

Establishing Threshold through Historical Analysis

Our PSPS guidance was established by calibrating a granular, historical dataset. We built our verification dataset by creating, or “backcasting,” the PSPS guidance through our historical dataset. We extracted values for all recent fires that have occurred in PG&E’s service area from 2012 to 2020. We aimed to capture as many historical fires as possible that were caused by PG&E equipment during high wind events (e.g., Camp, Nuns, Kincade, Zogg) while limiting the number of historical PSPS outages to minimize customer impacts. Our analysis included:

- Hourly review of past incidents
- Verification of hypothetical PSPS dates
- PSPS guidance values testing
- A robust guidance sensitivity and calibration analysis

Historical Analysis: CFP_D Quantification

Based on this analysis, PG&E uses a CFP_D value of nine as the quantitative threshold guidance value to consider for PSPS on PG&E’s distribution system.

To establish the CFP_D threshold of nine, we performed multiple sensitivity studies in “backcast” mode for calibration and validation. This involved running 68 different versions of the combined distribution PSPS guidance through hourly historical data throughout multiple years to calibrate

⁶⁷ See Resolution ESRB-8, p. 8-9.

PSPS guidance, including. This included simulating and learning from more than 2,500 virtual PSPS outages. Through this “lookback” analysis, we evaluated:

- The potential size, scope, and frequency of PSPS outages
- Potential customer impacts
- The days PSPS outages would have occurred
- Whether utility infrastructure would have qualified for de-energization

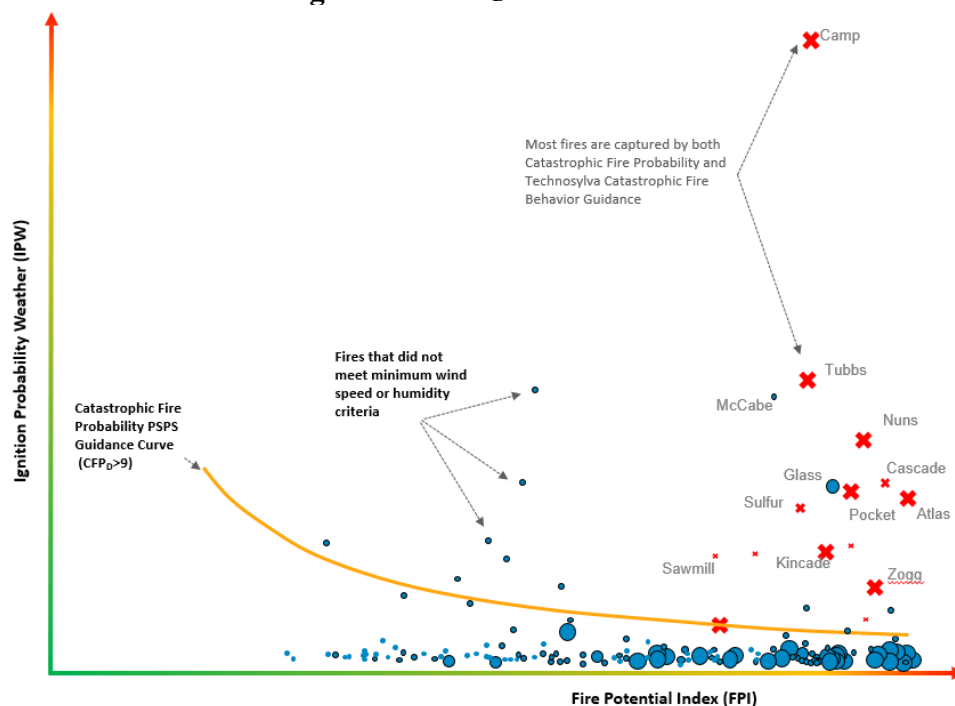
The mFPC and CFP_D guidance that is determined from Technosylva was also evaluated using this process.

The CFP_D guidance value of nine is shown in Figure 18 below with respect to recent large fires since 2012.

Any fires above nine that met the basic mFPC indicate PSPS would have been executed had these models and guidance been in use to measure risk during these historic events. The results show that deployment of this model could have helped to prevent wildfires, such as Camp, Tubbs, Nuns, Atlas, Kincade and Zogg fires, if implemented in 2012. Please note that the inclusion of a fire in this analysis does not indicate that PG&E is directly responsible for or caused a fire. Instead, the fires are included for the purpose of analyzing the impact of PG&E’s current PSPS Protocols.

The red “✕” symbols in Figure 18 below represent fires that were captured by both the CFP_D and Technosylva CFB. The blue dots under the line represent fires below the CFP_D guidance. Blue dots “●” above the line represent events that did not meet the mFPC criteria.

Figure 18: CFP_D Guidance



This analysis was a critical step to ensure the most catastrophic historical incidents are identified for PSPS guidance while considering the significant impacts to customers from PSPS outages across multiple dimensions (e.g., duration and frequency). This ensures that future PSPS outages

will capture conditions similarly during the most catastrophic fires while also balancing impacts to customers.

Historical Analysis: Execution

To execute the analysis at this scale, we utilized cloud computing resources to run PSPS model guidance for every hour at every 2 x 2 km grid cell across the historical data set to determine the number of times and locations PSPS guidance is exceeded. Each location exceeding PSPS guidance is then grouped into events to determine the location and size of each PSPS given the weather and fuels present at that time under the parameters of the study version. This allows us to determine if synoptic-driven events (e.g., Diablo wind events) are being identified, and if historical fires attributable to PG&E equipment may have been mitigated.

Verification of PSPS Protocols

In addition to these sensitivity studies, PG&E performed extensive verification of the PSPS protocols using several internal and external datasets. The goal of these analyses was to first determine if certain weather events are being captured (e.g., Diablo and offshore wind events), and second, to determine if lines that have been implicated in historic catastrophic fires would have been identified by the guidance.

The following internal datasets were used in the analysis:

- Climatology of Diablo wind events
- Hourly high-resolution wind maps from the climatology data set
- Distribution and transmission outage history
- The weather signal database
- Exploratory and dynamic dashboards created with internal and external data

The following external datasets were used in the analysis:

- National Center for Environmental Prediction (NCEP) North American Regional Reanalysis Archive (NARR) synoptic weather maps
- Historical fire occurrence data compiled by federal agencies
- RFWs from the NWS
- High risk of potential large fires due to wind from the GACC

The paragraphs below explain how we leveraged external and internal data to verify our PSPS protocols guidance thresholds.

NARR Archive

PG&E has acquired the NARR archive data dating back to 1995 and produced over two million maps that can be utilized to study past events. These maps are also useful to study the past conditions leading up to the PSPS such as the extent of precipitation events and heat waves. When the PSPS models are run through the climatology, each PSPS identified is compared against the NARR archive by a Meteorologist to determine the large-scale atmospheric features present for each event.

Climatology of Diablo Wind Events

PG&E also leverages the latest academic research on Diablo wind events that use surface-based observations to create a climatology of Diablo wind events. We adapted the criteria and processed it hour-by-hour through the 31-year weather climatology to determine the frequency, magnitude, and timing of Diablo winds. The output of this analysis was a 31-year calendar of

Diablo wind events experienced in the PG&E service area. As it relates to PSPS directly, the strongest Diablo wind events were evaluated to verify if PSPS guidance also selects these days for potential PSPS outages. Using the days identified by PSPS guidance and the Diablo PSPS list, a high-level comparison was completed to evaluate overlap of the events.

Any events that did not meet PSPS guidance were evaluated further using additional data sources described in this section. For example, the NARR archive proved useful, as antecedent conditions such as rainfall before an PSPS and the magnitude of the PSPS could be evaluated.

PG&E's Weather Signal Database

PG&E's Meteorology team built, and continues to maintain, a 'weather signal' database that flags each day from January 1, 1995, to present that experienced any weather-related outages on the distribution system. It also lists the main weather driver (e.g., heat, low-elevation snow, northeast wind, winter storm, etc.) for these outages. If distribution outage activity is not driven by weather, the day is classified as a "Blue Sky"⁶⁸ day. This dataset combines weather and distribution outage activity that allows rapid filtering of events based on the main weather drivers. To validate PSPS guidance, we used a combination of "Northeast" wind days and "Blue-Sky" days.

The PSPS guidance was validated against all Northeast wind days in the database. This is similar, but complimentary to the Diablo PSPS analysis as it also accounts for outage activity observed on those days. Events were also compared against "Blue Sky" days to ensure that PSPS would not be recommended for a high percentage of non-weather-impact days where little to no potential for outage activity was observed.

Red Flag Warnings from the National Weather Service

PG&E also validated PSPS guidance against RFWs from the NWS. RFWs mean warm temperatures, very low humidity, and stronger winds are expected to combine to produce an increased risk of fire danger. These RFWs were collected for the past six years (2015 – 2020) in shapefile format and used to evaluate the timing and spatial extent of historical RFWs against PSPS guidance. It should be noted that each NWS office in the PG&E service area has different RFW criteria, making direct and quantifiable comparison challenging. However, this dataset is used to evaluate whether RFWs were issued when PSPS guidance was met. Based on historical PSPS analysis, RFWs are expected to occur more frequently and cover a broader area than the area covered by PSPS outages.

High Risk of Potential Large Fires due to Wind from the Geographic Area Coordination Center

PG&E also validated PSPS guidance against historical "High Risk" days from the GACC. The GACCs issue High Risk Day alerts when fuel and weather conditions are predicted that historically have resulted in a significantly higher than normal chance for a new large fire or for significant growth on existing fires. Examples of critical weather conditions are high winds, low humidity, an unstable atmosphere, and very hot weather. Similar to the RFW analysis, this dataset was used to evaluate if High Risk days were issued when PSPS guidance was high. "Blue Sky" Day is defined as "The same as a non-weather impact day (no or very limited impacts due to weather)." Similar to RFWs, based on historical PSPS analysis, High Risk Days are expected to occur more frequently and cover a broader area than PSPS.

⁶⁸ The definition of a Blue Sky Day is as follows: "Blue Sky Day is defined the same as a non-weather impact day (no or very limited impacts due to weather)."

Hourly High-Resolution Wind Maps from PG&E Climatology Data Set

PG&E created hourly maps from high-resolution climatology and a web-based application to display any hour across 30 years. For each PSPS that meets PSPS guidance in the climatology, these maps were evaluated by a Meteorologist to better understand the nature of the event, wind speeds, antecedent conditions, and the spatial extent of strong winds. It's important to note forecast wind speeds are available in the same exact format, allowing Operational Meteorologists to put forecast events in perspective with historical events using the same model.

Detailed PSPS Dashboards

To evaluate the thresholds, Meteorologists and data scientists utilized the data sources described above to evaluate historical PSPS hour-by-hour to verify the locations and times that are being flagged as meeting PSPS guidance. These dashboards determine if historical fire events would have been identified by PSPS guidance. Meteorologists evaluated these data sources hourly to verify model performance of the IPW model and suitability for operations. The PSPS guidance can be evaluated spatially using the dashboard map integration, while the size and timing of the PSPS can be evaluated using the timeseries integration.

Section 11.2 - Any lessons learned that will lead to future improvement for the utility (SED Additional Information.)

Response:

PG&E collects lessons learned input from staff during and after every PSPS EOC activation to identify best practices and biggest opportunities for improvement. See Table 18 below for lessons learned for the July 20 – 21, 2024 PSPS.

Table 18: Lessons Learned from the PSPS

Issue	Discussion	Resolution
Customer Notification	A customer was impacted by a data issue that caused them to miss all post-outage notifications.	We have corrected the customer's mapping to prevent future missed notifications and continue to refine our process.
Customer Notification	A transmission-level facility was not notified at de-energization initiation and when re-energization was complete, due to an error on a manual process.	We plan to review processes with responsible personnel and consider additional training.

Section 12 – Other Relevant Information

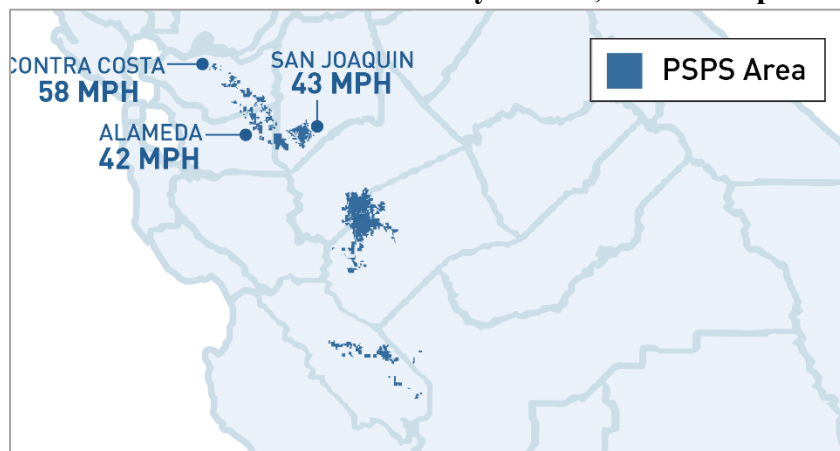
Maximum Wind Gusts

Table 19 and Figure 19 show the maximum wind gust speeds recorded by weather stations in each county within PSPS scope.

Table 19: Maximum Wind Gusts Recorded July 20 – 21, 2024 in Impacted Counties

County	Maximum Wind Gust (mph)	Station ID	Station Name
Alameda	42	AATC1	Altamont
Contra Costa	58	234PG	Black Diamond Mines
San Joaquin	43	CF123	I-580 – West of SR-132

Figure 19: Maximum Wind Gusts Recorded July 20 – 21, 2024 in Impacted Counties



APPENDIX

PACIFIC GAS AND ELECTRIC COMPANY

APPENDIX A

SECTION 2 – DECISION MAKING PROCESS

Appendix A: DECISION MAKING PROCESS¹

Table A-1.1: Factors Considered in the Decision to Shut Off Power for Each Distribution Circuit De-energized During the July 20 – 21, 2024 PSPS

** Please see Table A-1.2 for the description of each column header, as well as the unit and value provided.*

Circuit Name	Time Place	Forecast																			Agency					Observed											
		ws_mph	ws_mph_50m	wg_ec_mph	temp_2m_f	flame_length_ft_2hr	rate_of_spread_chlr_2hr	area_acres_8hr	rh_2m	vpd2m_mb	prob_cat	dfm_10hr	dfm_100hr	dfm_1000hr	lfm_herb	lfm_woody	lfm_chamisse_new	sum_trec_ovr	prob_ignition	cpd	HWW	HWA	RFW	GACC_Risk	High	Observed_ws_mph	Observed_wg_mph	Observed_temp_f	Observed_RH_%	Observed_ws_mph_AC	Observed_wg_mph_AC	Observed_temp_f_AC	Observed_RH_%_AC	open_paps_tags	Tx_impacts_yes_no	PSPS_Potential_Risk_Consequence	PSPS_Potential_Benefit
BRENTWOOD 2105	TP04	26	34	50	103	10.5	135.4	14035	12.2	63.2	0.939	0.033	0.065	0.058	30	82	71	56.7	0.00336	21.8	No	No	No	No		25	33	104	17	28	37	92	31	Yes	No	0.23968	370.3
HERDLYN 1102	TP04	31	38	49	102	11.7	171.4	18168	13.2	60.7	0.897	0.032	0.057	0.054	30	80	73	-99	0.00254	16.4	No	No	No	No		32	37	101	17	30	37	91	22	Yes	No	0.16798	101.5
VASCO 1102	TP05	19	24	35	95	12.9	193.1	36589	16.8	46.9	0.936	0.041	0.078	0.072	30	77	74	994.3	0.0004	2.5	No	No	No	No		32	37	98	20	30	35	81	26	Yes	No	0.12158	1,031.4
VASCO 1103	TP05	23	30	40	96	12.7	197.4	28324	16.4	49.1	0.901	0.043	0.087	0.076	30	81	73	-99	0.00058	2.8	No	No	No	No		32	37	98	20	30	35	81	34	Yes	No	0.11736	1,228.4

¹ Transmission circuits for this event were only de-energized when all distribution circuits in the downstream substations were de-energized, otherwise those transmission circuits would have remained energized. Because these transmission circuit de-energizations were not directly PSPS related and there were no customer impacts related to the de-energization of the transmission assets, this appendix does not report on them.

Table A-1.2: Description, Units, and Value provided for Factors Considered in the Decision to Shut Off Power for Each Distribution Circuit De-energized During the July 20 – 21, 2024 PSPS

Forecast / Agency / Observed	Value	Name	Unit	Value Provided	Description
Agency	HWW	High Wind Warning	N/A	Yes/No during event	High Wind Warning from the Federal National Weather Service.
Agency	HWA	High Wind Advisory	N/A	Yes/No during event	High Wind Advisory from the Federal National Weather Service.
Agency	RFW	Red Flag Warning	N/A	Yes/No during event	Red Flag Warning from the Federal National Weather Service.
Agency	GACC_HighRisk	GACC High Risk	N/A	Yes/No during event	High Risk issued by the Federal North or South Operations Predictive Services.
Forecast	prob_cat	Fire Potential Index (FPI)	probability outputs	max	Fire Potential Index (FPI) Model Output - Probability of a catastrophic fire if an ignition were to occur. FPI component of the CFP _D model.
Forecast	dfm_10hr	Dead Fuel Moisture Content 10 hrs	fuel moisture fraction	min	Dead Fuel Moisture in 10-hour fuel moisture class. Can be scaled to percentage by multiplying by 100.
Forecast	dfm_100hr	Dead Fuel Moisture Content 100 hrs	fuel moisture fraction	min	Dead Fuel Moisture in 100-hour moisture class. Can be scaled to percentage by multiplying by 100.
Forecast	dfm_1000hr	Dead Fuel Moisture Content 1000 hrs	fuel moisture fraction	min	Dead Fuel Moisture in 1000-hour moisture class. Can be scaled to percentage by multiplying by 100.
Forecast	lfm_herb	Live Fuel Moisture Content-herbacous	%	min	Live Fuel Moisture Percentage of herbaceous plant species. (% of species that is comprised of water)
Forecast	lfm_woody	Live Fuel Moisture Content-woody	%	min	Live Fuel Moisture Percentage of woody plant species. (% of species that is comprised of water)
Forecast	lfm_chamise_new	Live Fuel Moisture Content-shrub	%	min	Live Fuel Moisture Percentage of Chamise (shrub) plant species. (% of species that is comprised of water)
Forecast	sum_tree_ovr	Tree Overstake	ft	max	Sum of tree overstrike in a 2 x 2 km grid cell area in ft.
Forecast	prob_ignition	Ignition Probability Weather (IPW) Model Output	Probability	max	Ignition Probability Weather (IPW) Model Output - Probability of Ignition based on the probability of outages by cause. Ignition component of the CFP _D model. Ignition Probability Weather Model - A model that provides estimates of the probability of an ignition given an outage on an hourly basis
Forecast	cfpd	Catastrophic Fire Probability (CFP _D)	Scaled Probability	max	The product of probability of catastrophic fire (Prob_Cat) and IPW - probability of ignition (prob_ignition). This product is called the (CFP _D) Catastrophic Fire Probability distribution model. Scaled by 1000 to covert to an integer value.
Observed	Observed ws_mph	Observed Sustained Wind Speed during Event	mph	max	The maximum sustained wind speed recorded by weather stations mapped to each circuit from planned de-energization time to anticipated all-clear time.
Observed	Observed wg_mph	Observed Peak Wind Gust during Event	mph	max	The maximum wind gust recorded by weather stations mapped to each circuit from planned de-energization time to anticipated all-clear time.
Observed	Observed temp_f	Observed Temperature during Event	degrees F	max	The maximum temperature recorded by weather stations mapped to each circuit from planned de-energization time to anticipated all-clear time.
Observed	Observed RH_%	Observed Relative Humidity During Event	%	min	Minimum relative humidity recorded by all weather stations mapped to each circuit from planned de-energization time to anticipated all-clear time.

Forecast / Agency / Observed	Value	Name	Unit	Value Provided	Description
Observed	Observed ws_mph_AC	Observed Sustained Wind Speed at All Clear	mph	max	The maximum sustained wind speed recorded by weather stations mapped to each circuit at the all-clear time.
Observed	Observed wg_mph_AC	Observed Peak Wind Gust at All Clear	mph	max	The maximum wind gust recorded by weather stations mapped to each circuit at the all-clear time.
Observed	Observed temp_f_AC	Observed Temperature at All Clear	degrees F	max	The maximum temperature recorded by weather stations mapped to each circuit at the all-clear time.
Observed	Observed RH_%_AC	Observed Relative Humidity at All Clear	%	min	Minimum relative humidity recorded by all weather stations mapped to each circuit at the all-clear time.
Observed	open_pspstags	Open PSPS Qualified Tags	N/A	Yes/No During Event	PSPS-Qualified Tags include P1 (tree represents an immediate risk) and P2 (tree is damaged or diseased and could fall into nearby power lines) tree tags and Electric Corrective tags (Priority A - emergency, B - urgent, and E/F - risk-based).
Observed	Tx_impacts_yes_no	Impacted by Transmission	N/A	Yes/No During Event	Distribution lines that would have been de-energized due to de-energization of upstream transmission lines, regardless of whether those distribution lines would have also been de-energized due to direct distribution PSPS.
Forecast	ws_mph	Sustained wind speeds	mph	max	Sustained windspeed in miles per hour at 10 meters above ground level.
Forecast	ws_mph_50m	Sustained wind speeds at 50 m	mph	max	Sustained windspeed in miles per hour at 50 meters above ground level.
Forecast	wg_ec_mph	Forecasted Peak Wind Gust	mph	max	Wind gust in miles per hour at 10 meters above ground level.
Forecast	temp_2m_f	Temperature	degrees F	max	Temperature in Fahrenheit at 2 meters above ground level.
Forecast	flame_length_ft_2hr	Flame length	ft	max	Flame length in feet on fire front for first 2 hours of fire spread simulation from Technosylva.
Forecast	rate_of_spread_chhr_2hr	Rate of spread	chains/hr	max	Rate of fire spread in chains per hour for first 2 hours of fire spread simulation from Technosylva.
Forecast	area_acres_8hr	Acres burned	acres	max	Acres burned in the 8-hour fire spread simulation from Technosylva.
Forecast	rh_2m	Relative Humidity	%	min	Relative Humidity in percent at 2 meters above ground level.
Forecast	vpd2m_mb	Vapor Pressure Deficit	mb	max	Vapor Pressure Deficit in millibar at 2m above surface.

Table A-2.1: Factors Considered in the Decision to Shut Off Power for Each Transmission Circuit De-energized During the July 20 – 21, 2024 PSPS

* Please see Table A-2.2 for the description of each column header, as well as the unit and value provided.

** Note: PSPS decision making on Transmission does not occur at a per-circuit level, and instead occurs at the granularity of each transmission structure. These outputs are used in a GIS system and dashboard to visualize the areas of concern by area, which meteorologists and Transmission Asset Health Specialists review to scope the event. This includes a review of lines that have little to no impact to customers and electric grid reliability. The data provided here is representative of our high-resolution weather model data, which is driven by the Weather Research and Forecasting model. It is not inclusive of other model information reviewed by meteorologists that include external, public global and high-resolution weather models. This temporal and areal review of the risk, the operational timeline required to create the scope as well as any areas that were added based on subject matter expertise of meteorologists may lead to some circuits being de-energized that do not strictly exceed PSPS guidance.

	Forecast										Agency				Forecast												Observed												PSPS Risk vs. Benefit	
Circuit Name	ws_mph	ws_mph_50m	wg_mph	temp_2m_f	flame_length_ft_2hr	rate_of_spread_chhr_2hr	area_acres_8hr	rh_2m	vpd_2m_mb	HWW	HWA	RFW	GACC_High_Risk	prob_t	dfm_10hr	dfm_100hr	dfm_1000hr	lfm_herb	lfm_wood_y	lfm_chamise_new	sum_tree_ovr	OA	cdft	Observed_ws_mph	Observed_wg_mph	Observed_temp_f	Observed_RH_%	Observed_ws_mph_AC	Observed_wg_mph_AC	Observed_temp_f_AC	Observed_RH_%_AC	HFRA (Y/N)	High Risk Vegetation Present on Circuit (Y/N)	Tx_impacts_yes_no	PSPS Potential Risk Consequence	PSPS Potential Benefit				
Vasco-Herdlyn 60kV	29.1	No	50	103	12	173.3	25664	21	61	No	No	No	No	0.66	.04	.08	.07	30	No	74	No	.018	12	No	No	No	No	No	No	No	No	No	No	No	Yes	0.10486	765.6			
Tesla-Stockton CoGen Jct	32.5	No	45	101	18	135.9	11560	17	58	No	No	No	No	0.68	.03	.05	.05	30	No	74	No	.027	36	No	No	No	No	No	No	No	No	No	No	No	Yes	0.10470	63.8			
US Windpower 60 kV tap	23.5	No	40.8	90	12	173.3	21,729	26	37	No	No	No	No	0.53	.05	.1	.08	30	No	76	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	0.10470	338.2			

Table A-2.2: Description, Units, and Value provided for Factors Considered in the Decision to Shut Off Power for Each Transmission Circuit De-energized During the July 20 – 21, 2024 PSPS

Forecast / Agency / Observed	Value	Name	Unit	Value Provided	Description
Agency	HWW	High Wind Warning	N/A	Yes/No during event	High Wind Warning from the Federal National Weather Service.
Agency	HWA	High Wind Advisory	N/A	Yes/No during event	High Wind Advisory from the Federal National Weather Service.
Agency	RFW	Red Flag Warning	N/A	Yes/No during event	Red Flag Warning from the Federal National Weather Service.
Agency	GACC_HighRisk	GACC High Risk	N/A	Yes/No during event	High Risk issued by the Federal North or South Operations Predictive Services.
Forecast	ws_mph	Sustained wind speeds	mph	max	Sustained windspeed in miles per hour at 10 meters above ground level.
Forecast	ws_mph_50m	Sustained wind speeds at 50 m	mph	max	Sustained windspeed in miles per hour at 50 meters above ground level.
Forecast	wg_ec_mph	Gust wind speeds	mph	max	Wind gust in miles per hour at 10 meters above ground level.
Forecast	temp_2m_f	Temperature	degrees F	max	Temperature in Fahrenheit at 2 meters above ground level.
Forecast	flame_length_ft_2hr	Flame length	ft	max	Flame length in feet on fire front for first 2 hours of fire spread simulation from Technoslyva.
Forecast	rate_of_spread_chhr_2hr	Rate of spread	chains/hr	max	Rate of fire spread in chains per hour for first 2 hours of fire spread simulation from Technoslyva.
Forecast	area_acres_8hr	Acres burned	acres	max	Acres burned in the 8-hour fire spread simulation from Technoslyva.
Forecast	rh_2m	Relative Humidity	%	min	Relative Humidity in percent at 2 meters above ground level.
Forecast	vpd2m_mb	Vapor Pressure Deficit	mb	max	Vapor Pressure Deficit in millibar at 2m above surface
Forecast	prob_cat	Fire Potential Index (FPI)	probability outputs	max	Fire Potential Index (FPI) Model Output - Probability of a catastrophic fire if an ignition were to occur. FPI component of the CFP _D model.
Forecast	dfm_10hr	Dead Fuel Moisture Content 10 hrs (%)	fuel moisture fraction	min	Dead Fuel Moisture in 10-hour fuel moisture class. Can be scaled to percentage by multiplying by 100.
Forecast	dfm_100hr	Dead Fuel Moisture Content 100 hrs (%)	fuel moisture fraction	min	Dead Fuel Moisture in 100-hour moisture class. Can be scaled to percentage by multiplying by 100.
Forecast	dfm_1000hr	Dead Fuel Moisture Content 1000 hrs (%)	fuel moisture fraction	min	Dead Fuel Moisture in 1000-hour moisture class. Can be scaled to percentage by multiplying by 100.
Forecast	lfm_herb	Live Fuel Moisture Content-herbaceous	%	min	Live Fuel Moisture Percentage of herbaceous plant species. (% of species that is comprised of water)
Forecast	lfm_woody	Live Fuel Moisture Content-woody	%	min	Live Fuel Moisture Percentage of woody plant species. (% of species that is comprised of water)
Forecast	lfm_chamise_new	Live Fuel Moisture Content-shrub	%	min	Live Fuel Moisture Percentage of Chamise (shrub) plant species. (% of species that is comprised of water)
Forecast	sum_tree_ovr	Tree Overstake	ft	max	Sum of tree overstrike in a 2 x 2 km grid cell area in ft.
Forecast	OA	Transmission Operability Assessment (OA)	Probability	max	Ignition Probability Weather (IPW) Model Output - Probability of Ignition based on the probability of outages by cause. Ignition component of the CFPD model. Ignition Probability Weather Model - A model that provides estimates of the probability of an ignition given an outage on an hourly basis
Forecast	cfpt	Catastrophic Fire Potential (CFP _T)	Scaled Probability	max	The product of probability of catastrophic fire (Prob_Cat) and IPW - probability of ignition (prob_ignition). This product is called the (CFP _D) Catastrophic Fire Probability distribution model. Scaled by 1000 to covert to an integer value.

Forecast / Agency / Observed	Value	Name	Unit	Value Provided	Description
Observed	Observed ws_mph	Observed Sustained Wind Speed during Event	mph	max	The maximum sustained wind speed recorded by weather stations mapped to each circuit from de-energization time to all-clear time.
Observed	Observed wg_mph	Observed Wind gust during Event	mph	max	The maximum sustained wind gust recorded by weather stations mapped to each circuit from de-energization time to all-clear time.
Observed	Observed temp_f	Observed Temperature during event	degrees F	max	The maximum temperature recorded by weather stations mapped to each circuit from de-energization time to all-clear time.
Observed	Observed RH_%	Observed Relative Humidity During Event	%	min	Minimum relative humidity recorded by all weather stations mapped to each circuit from de-energization time to all-clear time.
Observed	Observed ws_mph_AC	Observed Sustained Wind Speed at All Clear	mph	max	The maximum sustained wind speed recorded by weather stations mapped to each circuit at the all-clear time.
Observed	Observed wg_mph_AC	Observed Sustained Wind gust at All Clear	mph	max	The maximum sustained wind gust recorded by weather stations mapped to each circuit at the all-clear time.
Observed	Observed temp_f_AC	Observed Temperature at All Clear-	degrees F	max	The maximum temperature recorded by weather stations mapped to each circuit at the all-clear time.
Observed	Observed RH_%_AC	Observed Relative Humidity at All Clear	%	min	Minimum relative humidity recorded by all weather stations mapped to each circuit at the all-clear time.
Observed	High Fire Risk Area	High Fire Risk Area	N/A	Yes/No During Event	Labeled 'Yes' when Circuit goes through High Fire Risk Area.
Observed	High Risk Vegetation Present on Circuit	High Risk Vegetation Present on Circuit	N/A	Yes/No During Event	High risk vegetation present on the circuit
Observed	transmission_impacts_yes_no	Impacted by Transmission	N/A	Yes/No During Event	Distribution lines that would have been de-energized due to de-energization of upstream transmission lines, regardless of whether those distribution lines would have also been de-energized due to direct distribution PSPS.
Observed	PSPS Potential Risk Consequence	PSPS Potential Risk Consequence	MAVF Score	Yes	Measure of the adverse impact to customers due to de-energization.
Observed	PSPS Potential Benefit	PSPS Potential Benefit	MAVF Score	Yes	Measure of the adverse impact to customers due to a catastrophic fire.

PACIFIC GAS AND ELECTRIC COMPANY

APPENDIX B

SECTION 3 – DE-ENERGIZED TIME, PLACE, DURATION AND CUSTOMERS

Appendix B: DE-ENERGIZED TIME, PLACE, DURATION AND CUSTOMERS

Circuits labeled as “non-HFTD” are located outside of the CPUC High Fire-Threat District (HFTD). These circuits or portions of circuits are impacted for one of two reasons: (1) indirect impacts from transmission lines being de-energized or (2) the non-HFTD portion of the circuit are conductive to the HFTD at some point in the path to service.

Table B-1. Circuits De-Energized During the July 20 – 21, 2024 PSPS

Distribution / Transmission	Circuit Name	De-Energization Date and Time	All-Clear Date and Time	Restoration Date and Time	Key Communities	HFTD Tier(s)	Total Customers	Residential Customers	Commercial / Industrial Customers	Medical Baseline Customers	AFN other than MBL Customers	Other Customers
Distribution	BRENTW OOD 2105	07/20/2024 15:25 PDT	07/20/2024 20:40 PDT	07/20/2024 21:49 PDT	CONTRA COSTA	Partially Outside HFTD, Tier 2	60	21	35	3	2	4
Distribution	HERDLYN 1102	07/20/2024 15:30 PDT	07/20/2024 20:40 PDT	07/20/2024 23:16 PDT	CONTRA COSTA, ALAMEDA, SAN JOAQUIN	Outside HFTD	123	70	39	4	13	14
Distribution	VASCO 1102	07/20/2024 14:43 PDT	07/20/2024 19:30 PDT	07/20/2024 20:58 PDT	ALAMEDA	Outside HFTD	12	8	4	2	0	0
Distribution	VASCO 1103	07/20/2024 14:37 PDT	07/20/2024 19:30 PDT	07/20/2024 21:00 PDT	ALAMEDA	Outside HFTD	16	11	4	0	2	1
Transmission	Vasco-Herdlyn 60kV	07/20/2024 15:40 PDT	07/20/2024 20:40 PDT	07/21/2024 08:22 PDT	CONTRA COSTA, ALAMEDA	Outside HFTD	1	0	0	0	0	0
Transmission	Tesla-Stockton COGEN Jet 115kV	07/20/2024 16:09 PDT	07/20/2024 20:40 PDT	07/21/2024 08:30 PDT	ALAMEDA, SAN JOAQUIN	Outside HFTD	0	0	0	0	0	0
Transmission	US Windpower Tap	07/20/2024 15:40 PDT	07/20/2024 20:40 PDT	07/21/2024 08:22 PDT	ALAMEDA	Outside HFTD	0	0	0	0	0	0
Total							212	110	82	9	17	19

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX C
SECTION 4 – DAMAGE AND HAZARDS TO OVERHEAD FACILITIES

Appendix C: DAMAGE AND HAZARDS TO OVERHEAD FACILITIES

Table C-1. Damages & Hazards Found Within the De-Energized Areas

Circuit Name	County	Structure Identifier	Tier 2/3 or Non-HFTD	Damage / Hazard	Type of Damage/Hazard	Description of Damage
Vasco 1103	Alameda	103776869	Non-HFTD	Hazard	Vegetation	Tree branch on line

PACIFIC GAS AND ELECTRIC COMPANY

APPENDIX D

SECTION 6 – PUBLIC SAFETY PARTNERS CONTACTED

Appendix D: PUBLIC SAFETY PARTNERS CONTACTED

Table D-1. Public Safety Partners Contacted

Organization/Jurisdiction	Title	HFTD or HFRA Tier²	Date/Time Contacted
Alameda County	County Administration	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Board President	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Board Vice President	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	County Administrator	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	County Clerk Recorder	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Division Chief	Tier 3, Tier 2	07/18/2024 21:42 PDT
Alameda County	Division Chief of Operations/ Emergency Management	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Emergency Medical Services Disaster and WMD Coordinator	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Emergency Preparedness Manager	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Fire Chief	Tier 3, Tier 2	07/18/2024 21:42 PDT
Alameda County	General	Tier 3, Tier 2	07/18/2024 21:42 PDT
Alameda County	Main Line	Tier 3, Tier 2	07/18/2024 21:42 PDT
Alameda County	Offices of Emergency Services Captain	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Office of Emergency Services Emergency Operations Center Lead	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	President of the Board	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Safety & Emergency Preparedness Manager	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Senior Emergency Services Coordinator	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Sheriff	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Superintendent of Water Distribution	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Supervisor	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Technician	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County	Train Ops	Tier 3, Tier 2	07/18/2024 21:42 PDT
Alameda County	Watch Commander	Tier 3, Tier 2	07/18/2024 21:42 PDT
Alameda County	Water Operations Manager	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County CCA	General	Tier 3, Tier 2	07/18/2024 21:41 PDT
Alameda County Communication Facility	AT&T Services Inc	Non-HFTD or Non- HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT

² Catastrophic Fire Behavior runs both in and outside of High Fire Risk Areas (HFRA). The PG&E Meteorology Team evaluates non-HFRA areas for catastrophic wildfire risk in unusual circumstances.

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Alameda County Communication Facility	Sprint Nextel Corporation	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Alameda County Communication Facility	T-Mobile West Corporation	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Alameda County Communication Facility	T-Mobile West LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Alameda County Communication Facility	TCI Cablevision	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 20:31 PDT
Alameda County Communication Facility	Verizon	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Alameda County Oakland	City Administration	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Acting Fire Chief	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:21 PDT
Alameda County Oakland	Assistant City Administrator	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:21 PDT
Alameda County Oakland	Chief of Education & Community Safety	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	City Administrator	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:21 PDT
Alameda County Oakland	City Clerk	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Communications Center	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Council Member	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Council President	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Council Member	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Council Member At-Large	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Deputy Mayor	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Alameda County Oakland	Emergency Services Manager	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Mayor	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:20 PDT
Alameda County Oakland	Police Chief (Interim)	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:21 PDT
Contra Costa County	City Administration	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Board Chair	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Board Vice Chair	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Chair of the Board	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Chief of Staff	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	County Administrator	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	County Clerk Recorder	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Deputy Fire Chief, Mutual Aid Coordinator	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Duty Officer	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Duty Officer - 24/7 Staff call line	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Emergency Manager	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Emergency Preparedness Manager	Tier 3, Tier 2	07/18/2024 21:42 PDT
Contra Costa County	Fire Chief	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Fire Chief	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Office of Emergency Services Warning System	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Sheriff	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County	Supervisor	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County Antioch	City Clerk	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Antioch	City Manager	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Antioch	Council Member	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Antioch	Emergency	Tier 2	07/18/2024 21:42 PDT
Contra Costa County Antioch	Mayor	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Antioch	Mayor Pro TEM	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Antioch	Police Chief	Tier 2	07/18/2024 21:41 PDT
Contra Costa County CCA	General	Tier 3, Tier 2	07/18/2024 21:41 PDT
Contra Costa County Communication Facility	AT&T Mobility LLC	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Communication Facility	AT&T Pacific Bell	Tier 2	07/18/2024 21:46 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Contra Costa County Communication Facility	AT&T Services Inc	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Communication Facility	GTE Mobilenet of California LP	Tier 3, Tier 2	07/18/2024 21:46 PDT
Contra Costa County Communication Facility	GTE Mobilenet DBA Verizon Wireless	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Communication Facility	SBA Towers	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Communication Facility	T-Mobile West Corporation	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Communication Facility	T-Mobile West LLC	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Communication Facility	Verizon Wireless	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Other Facility	Contra Costa Water District	Tier 2	07/18/2024 21:46 PDT
Contra Costa County Pittsburg	Chief of Police	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Pittsburg	City Clerk	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Pittsburg	City Manager	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Pittsburg	Council Member	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Pittsburg	Emergency	Tier 2	07/18/2024 21:42 PDT
Contra Costa County Pittsburg	Fire Chief	Tier 2	07/18/2024 21:42 PDT
Contra Costa County Pittsburg	Mayor	Tier 2	07/18/2024 21:41 PDT
Contra Costa County Pittsburg	Non-Emergency	Tier 2	07/18/2024 21:42 PDT
Contra Costa County Pittsburg	Vice Mayor	Tier 2	07/18/2024 21:41 PDT
Fresno County	City Administration	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Board Chair	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Chair of the Board	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	City Clerk	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	City Manager	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:42 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Fresno County	Council Member	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	County Administrative Officer	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	County Executive Officer	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Emergency	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:42 PDT
Fresno County	Emergency Management Specialist	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Facility Services	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Lieutenant	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Medical Health Operational Area Coordinator	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Mayor	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Mayor Pro TEM	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Office of Emergency Services Director of Emergency Services	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Sheriff	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Fresno County	Staff Analyst	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Merced County	County Administration	HFRA	07/18/2024 21:41 PDT
Merced County	Battalion Chief	HFRA	07/18/2024 21:41 PDT
Merced County	Board Vice Chair	HFRA	07/18/2024 21:41 PDT
Merced County	Cal Fire Chief	HFRA	07/18/2024 21:42 PDT
Merced County	County Clerk	HFRA	07/18/2024 21:41 PDT
Merced County	County Executive Officer	HFRA	07/18/2024 21:41 PDT
Merced County	District 4 Supervisor	HFRA	07/18/2024 21:42 PDT
Merced County	Duty Chief	HFRA	07/18/2024 21:41 PDT
Merced County	Fire Chief	HFRA	07/18/2024 21:42 PDT
Merced County	General	HFRA	07/18/2024 21:41 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Merced County	Medical Health Operational Area Coordinator	HFRA	07/18/2024 21:41 PDT
Merced County	Office of Emergency Services Coordinator	HFRA	07/18/2024 21:41 PDT
Merced County	Office of Emergency Services Director	HFRA	07/18/2024 21:41 PDT
Merced County	Sheriff	HFRA	07/18/2024 21:41 PDT
Merced County	Supervisor	HFRA	07/18/2024 21:41 PDT
Merced County	Supervisor District 1	HFRA	07/18/2024 21:41 PDT
Merced County	Unit Chief	HFRA	07/18/2024 21:41 PDT
Merced County Communication Facility	AT&T Mobility LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Communication Facility	AT&T Services Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Merced County Communication Facility	Crown Castle International	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Communication Facility	Dobson Cellular Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Communication Facility	MetroPCS Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Communication Facility	T-Mobile USA Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Communication Facility	T-Mobile WEST LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Merced County Communication Facility	Verizon	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Merced County Emergency Services Facility	California Department of Forestry	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Merced County Emergency Services Facility	California Highway Patrol	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Emergency Services Facility	City of Gustine	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Other Facility	Crown Castle USA Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
Merced County Water and Waste Water Facility	City of Gustine	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Merced County Gustine	City Manager	HFRA	07/18/2024 21:41 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Merced County Gustine	Emergency	HFRA	07/18/2024 21:41 PDT
San Benito County	County Administrative Officer	Tier 2	07/18/2024 21:41 PDT
San Benito County	Emergency Manager	Tier 2	07/18/2024 21:41 PDT
San Benito County	Emergency Services Specialist	Tier 2	07/18/2024 21:41 PDT
San Benito County	Non-Emergency	Tier 2	07/18/2024 21:42 PDT
San Benito County	Sheriff	Tier 2	07/18/2024 21:41 PDT
San Benito County	Staff Analyst	Tier 2	07/18/2024 21:41 PDT
San Benito County	Supervisor	Tier 2	07/18/2024 21:41 PDT
San Benito County CCA	General	Tier 2	07/18/2024 21:41 PDT
San Benito County Communication Facility	AT&T Services Inc	Tier 2	07/18/2024 21:46 PDT
San Benito County Communication Facility	Pinnacles Tel Co	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
San Benito County Communication Facility	T-Mobile West Corporation	Tier 2	07/18/2024 21:46 PDT
San Joaquin County	Board Chair	HFRA	07/18/2024 21:41 PDT
San Joaquin County	Board Vice Chair	HFRA	07/18/2024 21:41 PDT
San Joaquin County	County Administrator	HFRA	07/18/2024 21:41 PDT
San Joaquin County	County Clerk	HFRA	07/18/2024 21:41 PDT
San Joaquin County	Director of Emergency Operations	HFRA	07/18/2024 21:41 PDT
San Joaquin County	EMS Admin	HFRA	07/18/2024 21:41 PDT
San Joaquin County	Fire Chief	HFRA	07/18/2024 21:41 PDT
San Joaquin County	Sheriff	HFRA	07/18/2024 21:41 PDT
San Joaquin County	Supervisor	HFRA	07/18/2024 21:41 PDT
San Joaquin County	Supervisor District 3	HFRA	07/18/2024 21:41 PDT
San Joaquin County Communication Facility	AT&T Mobility, LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
San Joaquin County Communication Facility	AT&T Services Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
San Joaquin County Communication Facility	AT&T Wireless Service LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
San Joaquin County Communication Facility	Comcast	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
San Joaquin County Communication Facility	Comcast Cable	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:28 PDT
San Joaquin County Communication Facility	Comcast Cable Communications Management LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
San Joaquin County Communication Facility	Comcast Cable Communications Management LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
San Joaquin County Communication Facility	Comcast Cablevision Communications Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
San Joaquin County Communication Facility	Comcast Fresno LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
San Joaquin County Communication Facility	Comcast Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
San Joaquin County Communication Facility	Comcast of California	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
San Joaquin County Communication Facility	GTE Mobilenet of California LP	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
San Joaquin County Communication Facility	Sprint Corporation	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
San Joaquin County Communication Facility	T-Mobile	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
San Joaquin County Communication Facility	T-Mobile West LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
San Joaquin County Communication Facility	TCI Cablevision	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
San Joaquin County Communication Facility	TW Telecom Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
San Joaquin County Communication Facility	Verizon	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
San Joaquin County Communication Facility	Verizon Services Corporation	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
San Joaquin County Energy Sector Facility	Pacific Gas & Electric Company	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:46 PDT
San Joaquin County Water and Waste Water Facility	City of Tracy	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
San Joaquin County Water and Waste Water Facility	County of San Joaquin	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
San Joaquin County Tracy	Police Department	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
San Joaquin County Tracy	City Clerk	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
San Joaquin County Tracy	City Manager	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
San Joaquin County Tracy	Communications Supervisor	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
San Joaquin County Tracy	Council Member	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
San Joaquin County Tracy	Fire Chief	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
San Joaquin County Tracy	Lieutenant	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:42 PDT
San Joaquin County Tracy	Mayor	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
San Joaquin County Tracy	Mayor Pro TEM	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
San Joaquin County Tracy	Sergeant	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/18/2024 21:41 PDT
Stanislaus County	County Administration	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Board Chair	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Board Vice Chair	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Chief Executive Officer	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	County Clerk Recorder	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	County Fire Warden	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Emergency Medical Services Duty Officer	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Emergency Manager	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Health Officer	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Medical Health Operational Coordinator	Tier 2	07/19/2024 13:21 PDT
Stanislaus County	Public Health Duty Officer	Tier 2	07/19/2024 13:21 PDT
Stanislaus County	Sheriff	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	Supervisor	Tier 2	07/19/2024 13:20 PDT
Stanislaus County	County Fire Warden	Tier 2	07/19/2024 13:21 PDT
Stanislaus County	Emergency Medical Services Duty Officer	Tier 2	07/19/2024 13:21 PDT
Stanislaus County	Emergency Manager	Tier 2	07/19/2024 13:21 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Stanislaus County	Health Officer	Tier 2	07/19/2024 13:30 PDT
Stanislaus County	Medical Health Operational Coordinator	Tier 2	07/19/2024 13:21 PDT
Stanislaus County Communication Facility	AT&T Mobility LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Communication Facility	AT&T Mobility LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Communication Facility	AT&T Services Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Communication Facility	Comcast Fresno LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
Stanislaus County Communication Facility	Comcast of San Joaquin Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
Stanislaus County Communication Facility	GTE Mobilenet of California LP	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Communication Facility	Metro PCS Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Communication Facility	T-Mobile West LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Communication Facility	TCI Cablevision of San Joaquin Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
Stanislaus County Communication Facility	Televents of San Joaquin Inc	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 12:48 PDT
Stanislaus County Communication Facility	Verizon	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Emergency Services Facility	City of Newman	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:28 PDT
Stanislaus County Other Facility	Comcast Fresno LLC	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:27 PDT
Stanislaus County Water and Waste Water Facility	City of Newman	Non-HFTD or Non-HFRA; within PSPS scope (see footnote 2)	07/19/2024 13:28 PDT
Stanislaus County Newman	Chief Plant Operator	Tier 2	07/19/2024 13:20 PDT
Stanislaus County Newman	City Manager	Tier 2	07/19/2024 13:20 PDT

Organization/Jurisdiction	Title	HFTD or HFRA Tier ²	Date/Time Contacted
Stanislaus County Newman	Council Member	Tier 2	07/19/2024 13:20 PDT
Stanislaus County Newman	Fire Chief	Tier 2	07/19/2024 13:20 PDT
Stanislaus County Newman	Mayor	Tier 2	07/19/2024 13:20 PDT
Stanislaus County Newman	Non-Emergency	Tier 2	07/19/2024 13:20 PDT
Stanislaus County Newman	On Call Officer	Tier 2	07/19/2024 13:21 PDT
Stanislaus County Newman	On-Call Public Works Employee	Tier 2	07/19/2024 13:21 PDT
Stanislaus County Newman	Public Works Director	Tier 2	07/19/2024 13:20 PDT
Stanislaus County Newman	Public Works Superintendent	Tier 2	07/19/2024 13:20 PDT

PACIFIC GAS AND ELECTRIC COMPANY
APPENDIX E
SECTION 8 – ALL CLEAR ZONE MAP

Appendix E: ALL CLEAR ZONE MAP

Figure E-1. All Clear Zone Map



VERIFICATION

I, undersigned, say:

I am an officer of PACIFIC GAS AND ELECTRIC COMPANY, a corporation, and am authorized to make this verification for that reason.

I have read the foregoing “PG&E Public Safety Power Shutoff Report to the CPUC” for the July 20 – 21, 2024 PSPS and I am informed and believe the matters stated therein to be true.

I declare under penalty of perjury that the foregoing is true and correct. Executed at Oakland, California this 23rd day of August 2024.

A handwritten signature in black ink, appearing to read "Mark Quinlan", written over a horizontal line.

MARK QUINLAN
SENIOR VICE PRESIDENT
WILDFIRE, EMERGENCY & OPERATIONS