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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Update Rules for the Safety, Reliability, and Resiliency of Electrical Distribution Systems	Rulemaking 24-05-023 (Issued June 6, 2024)

PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 E) PROPOSAL IN RESPONSE TO ADMINSTRATIVE LAW JUDGE RULING

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Attorneys for
PACIFIC GAS AND ELECTRIC COMPANY

Dated: December 13, 2024

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OF THE STATE OF CALIFORNIA

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Pacific Gas and Electric Company (PG&E) respectfully submits this Data Definition and Guideline Proposal (PG&E Proposal) in response to Administrative Law Judge Colin Rizzo's *Ruling Requesting Draft Proposals from Respondents and Stakeholders Regarding Data Definition and Guideline Enhancements* (ALJ Ruling), issued on November 12, 2024.

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The ALJ Ruling requests that PG&E and other stakeholders: (1) provide Initial Data Definition and Guideline Proposals according to a common outline attached to the ALJ Ruling;[1] and (2) respond to five specific questions.[2] In this filing, PG&E submits its Proposal in Attachment A using the common outline in the ALJ Ruling. PG&E provides its responses to the five questions in the ALJ Ruling in Attachment B.

Respectfully Submitted,

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Dated: December 13, 2024

[1] ALJ Ruling at 3.

[2] ALJ Ruling at 7.

PACIFIC GAS AND ELECTRIC COMPANY

ATTACHMENT A

ATTACHMENT A
PG&E's Initial Data Definition and Guidelines Proposal

1. Proposal Summary

PG&E provides detailed outage information to the California Public Utilities Commission (CPUC or Commission), as well as other state and federal agencies such as the Office of Energy Infrastructure Safety (Energy Safety), California Independent System Operator (CAISO), and the North American Electric Reliability Council (NERC). These detailed reports are described below in Section 2.1.[3]

In addition, PG&E provides extensive and detailed outage information to its customers both before (for planned outages) and during outages (for both planned and unplanned outages). These communications are described in Section 2.2. PG&E also communicates with its customers regarding planned improvements to its infrastructure which, in many cases, will increase reliability and reduce outages. These communications are described in Section 2.3.

PG&E does see this proceeding as an opportunity for stakeholders to address the paradigm shift presented by wildfire mitigation efforts which change the operational mode in large portions of California. Performance can vary widely across regions due to localized weather patterns and should be considered for proposed changes to reporting requirements.

Finally, given PG&E's extensive and detailed reporting to regulators and notification process for customers, PG&E is not at this time proposing any changes or enhancements to the reliability and outage reporting process. PG&E would strongly urge the Commission to carefully consider whether the benefits of additional reliability and outage reporting outweigh the additional costs that will be borne by customers to facilitate added reporting. In addition, PG&E would encourage the Commission to use this proceeding to evaluate ways to streamline existing reporting requirements to reduce the costs and/or resources associated with reporting information that may have minimal use or material impact.

[3] Given the volume and frequency of these reports, PG&E has not included these reports as attachments to this Proposal. However, PG&E is happy to provide to the Commission any of these reports and to provide to stakeholders the public versions of any of these reports.

2. Existing Reporting

2.1. Data/Reports on Outages and Reliability provided to the CPUC or Other Entities - Include a description of the Data/Report, Recipient, Reporting Cycle and Format

This section of PG&E's Proposal describes existing outage and reliability reporting that PG&E submits to the Commission and/or other entities including:

Section 2.1.1:	California Independent System Operator (CAISO) and North American Electric Reliability Corporation (NERC) Transmission Reports
Section 2.1.2:	CPUC Annual Electric Reliability Report
Section 2.1.3:	CPUC General Order 166 Annual Report
Section 2.1.4:	CPUC PSPS Event Reporting
Section 2.1.5:	CPUC Safety and Operational Metrics
Section 2.1.6:	CPUC Enhanced Safety Setting Report
Section 2.1.7:	Office of Energy Infrastructure Safety (Energy Safety) Quarterly Data Report
Section 2.1.8:	PG&E Townhalls and Website
Section 2.1.9:	U.S. Energy Information Administration's Annual Electric Power Industry Report
Section 2.1.10:	U.S. Department of Energy Electric Incident and Disturbance Report

2.1.1 CAISO and NERC Availability Transmission Report

In accordance with Appendix C of the Transmission Control Agreement (TCA) between PG&E and the CAISO, PG&E submits to the CAISO an annual report that describes PG&E's "availability measures performance" for the previous year. The availability measures performance is monitored through the use of control charts with annual performance indices plotted for Annual Average Forced Outage Frequency, Annual Average Accumulated Forced Outage Duration, and Annual Proportion of Circuits with No Forced Outages. The control charts are developed for the 500 kilovolt (kV), 230 kV, 115 kV and 69 kV voltage classes for the transmission line circuits placed under the operational control of the CAISO. Using these charts, and a series of tests, an analysis is

performed to assess the stability of the annual performance, detect shifts in performance, and identify longer term performance trends. The preparation of this annual report is based on forced outage data collected and reported to the CAISO and includes the outage date, start time, end time, affected transmission facility, and the probable cause(s) if known.

PG&E also reports on a quarterly basis to NERC via the Transmission Availability Data System (TADS). TADS collects transmission outage data in a common format for Bulk Electric System AC Circuits and Transmission Class Transformers. Outage data is bulk uploaded directly into webTADS (an OATI developed software). The availability data collected via TADS allows NERC to develop transmission metrics that analyze outage frequency, duration, causes, and other factors related to transmission outages.

2.1.2 CPUC Annual Electric Reliability Report

The Annual Reliability Report is submitted annually to the Commission as required in Decision (D.) 16-01-008 and provides detailed and extensive reliability information to the Commission and the public. The Annual Reliability Report discusses the following four major reliability metrics at the transmission and distribution level, as well as at the PG&E division level:

- System Average Interruption Duration Index (SAIDI);
- System Average Interruption Frequency Index (SAIFI);
- Customer Average Interruption Duration Index (CAIDI); and
- Momentary Average Interruption Frequency Index (MAIFI).

The Annual Reliability Report identifies the top 1% of the worst performing circuits from a SAIDI and SAIFI perspective. The report also discusses the number of crews employed to restore service during the top ten outages, as well as the help tickets addressed. The Annual Reliability Report is posted to the CPUC website as well as PG&E's website at: https://www.pge.com/en/about/pge-systems/electric-systems/electric-reliability-reports.html.

2.1.3 CPUC General Order 166 Annual Report

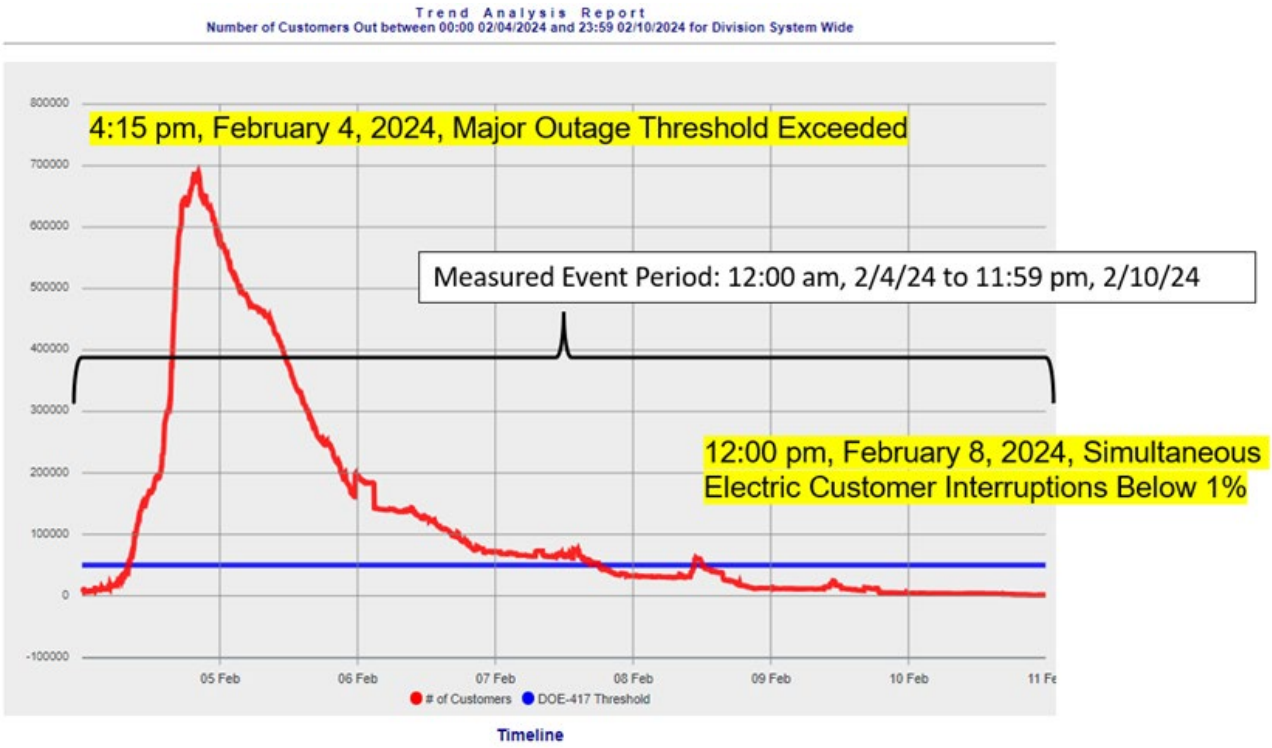
There are fourteen standards in CPUC General Order (GO) 166. GO 166, Standard 11 requires California electric utilities to submit an annual report by April 30 each year to the Safety Policy Division (SPD) addressing the utility's compliance with the fourteen GO 166 component standards for the prior calendar year beginning January 1 and ending December 31. GO 166, Standards 1-4 address training, exercise and internal and external communication and coordination capability improvement measures. Standards 5-9 address activation, notification, mutual assistance evaluation, communication and

personnel redeployment requirements for major outages. Standards 10 and 14 address pre-event coordination with external stakeholders. Major outage electric service reliability and customer communication requirements can be found in Standards 12 and 13.

GO 166, Standard 12 stipulates that the Commission shall perform a review of utility performance following every Major Outage. When electric customer outages reach or exceed the Major Outage threshold, PG&E provides a restoration benchmark metric for the outage event to include a CAIDI calculation. This standard sets a benchmark for the Commission to use in reviewing utility restoration performance during Measured Events. A utility's restoration performance during a Measure Event is presumed reasonable if the CAIDI is 570 or below and presumed unreasonable if the CAIDI is above 570.

For PG&E, a Major Outage is defined—consistent with GO 166—as a simultaneous outage impacting more than 550,000 electric customers. For example, as shown in Figure 1 below, PG&E experienced a Major Outage on February 4, 2024, involving approximately 700,000 customers.

Figure 1: Major Outage – February 4, 2024



A Measured Event is a Major Outage (as shown for example in Figure 1 above), resulting from non-earthquake, weather-related causes, affecting between 10% (simultaneous) and 40% (cumulative) of a utility's electric customer base. A Measured Event is deemed to begin at 12:00 a.m. on the day when more than one percent (simultaneous) of the utility's

electric customers experience sustained interruptions. A Measured Event is deemed to end when fewer than one percent (simultaneous) of the utility's customers experience sustained interruptions in two consecutive 24-hour periods (12:00 a.m. to 11:59 p.m.); and the end of the Measured Event in 11:59 p.m. of that 48-hour period.

The Customer Average Interruption Duration Index or CAIDI is computed using the following equation:

total customer minutes of interruption / total number of customer interruptions

If a single electric customer experiences more than one sustained interruption during a Measured Event, each interruption counts as a separate interruption. CAIDI is measured from the beginning of the Measured Event and continues until all customers experiencing interruptions during the Measured Event are restored.

GO 166, Standard 13 sets a benchmark for the Commission's review of utility call center performance during Measured Events. A utility's call center performance during a Measured Event is presumed reasonable if the percent busies calculation is lower than Level-1 and presumed unreasonable if the percent busies calculation is greater than Level-2. Level-1 is defined as 30% busies over the day of the outage (12:00 a.m. to 11:59 p.m.). Level-2 is defined as 50% busies over the day of the outage (12:00 a.m. to 11:59 p.m.) plus at least 50% busies in each of six one-hour increments.

PG&E's GO 166 Annual Report provides information required by GO 166 regarding outages that occurred in the prior year. The latest PG&E GO 166 Annual Report cover pleading can be found on the Commission's website at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-policy-division/reports/pge---2023-annual-report.pdf.

2.1.4 CPUC PSPS Event Reporting

The Commission requires a number of different reports regarding Public Safety Power Shutdown (PSPS) events and outages using templates provided by the Commission's Safety and Enforcement Division (SED). These reports include:

- PSPS Pre-Season Report: Discussing year-over-year improvements and the various departments and their requirements.
- PSPS Event-Specific Reports: Due 10 business days after the conclusion of a PSPS event, these reports provide details about the event.
- PSPS Post-Season Report: Summarizing the PSPS activity for the year, including financial reports.

2.1.5 CPUC Safety and Operational Metrics

In D.21-11-009, the Commission established 32 safety and operational metrics (SOMs). Ordering Paragraph 5 of that decision requires that:

> PG&E shall report its Safety and Operational Metrics as follows. PG&E shall, on a semi-annual basis, serve and file its SOMs report in Rulemaking 20-07-013, any successor Safety Model Assessment Proceeding, and its most recent or current General Rate Case and Risk Assessment and Mitigation Phase proceedings starting March 31, 2022, and continuing annually at the end of September and March thereafter, with the March reports covering the 12 months of the previous calendar year (i.e., January through December) and the September reports providing data for January through June of the current year. PG&E shall concurrently send a copy of its semi-annual SOMs reports to the Director of the Commission's Safety Policy Division and to RASA_Email@cpuc.ca.gov. PG&E shall:
>
> a) Report on each SOM, using data for the preceding 12 months and providing all available historical data;
>
> b) For each SOM, provide a proposed target for the year following the reporting period for each metric and a 5-year target, with the proposed target represented as specific values, ranges of values, a rolling average, or another specified target value, except for our final adopted SOM #s 1.3, 2.3, 3.1, 3.3, 3.5, and 3.6 for which PG&E may provide directional targets;
>
> c) For each SOM, provide a narrative description of the rationale for selecting the target proposed and why a specific value, a range of values, a rolling average or another type of target is selected;
>
> d) For each SOM, provide a narrative description of progress towards the proposed annual and 5-year targets;
>
> e) For each SOM, provide a narrative description of any substantial deviation from prior trends based on quantitative and qualitative analysis, as applicable;
>
> f) For each SOM, provide a brief description of current and future activities to meet the proposed targets; and

g) Provide the Commission's Safety and Policy Division with a copy of any report filed more frequently than semi-annually with the Commission that contains SOMs, at the same time the report is filed."[4]

The reliability metrics included in SOMs and their definition are as follows:

1. System Average Interruption Duration (SAIDI) Unplanned: Average duration of sustained interruptions per metered customer due to all unplanned outages, excluding on Major Event Days (MEDs), in a calendar year. "Average duration" is defined as: Sum of (duration of interruption * # of customer interruptions) / Total number of customers served. "Duration" is defined as: Customer hours of outages. Includes all transmission and distribution outages.

2. System Average Interruption Frequency (SAIFI) Unplanned: Average frequency of sustained interruptions due to all unplanned outages per metered customer, except on MEDs, in a calendar year. "Average frequency" is defined as: Total # of customer interruptions / Total # of customers served. Includes all transmission and distribution outages.

3. System Average Outages due to Vegetation and Equipment Damage in High Fire Threat District (HFTD) Areas: Average number of sustained outages on MEDs per 100 circuit miles in HFTD per metered customer, in a calendar year, where each sustained outage is defined as: total number of customers interrupted / total number of customers served.

4. System Average Outages due to Vegetation and Equipment Damage in HFTD Areas (Non-MEDs): Average number of sustained outages on Non-MEDs per 100 circuit miles in HFTD per metered customer, in a calendar year, where each sustained outage is defined as: total number of customers interrupted / total number of customers served.

For each SOM, the reliability and outage information included provides historical metric performance, proposed 1 and 5-year targets including a narrative describing how targets were set, progress towards the targets including any substantial deviations in prior trends and current and planned work activities to meet the targets.

2.1.6 CPUC Enhanced Safety Settings Report

In response to an October 25, 2021 letter from former Commission President Marybel Batjer, PG&E provides monthly reports on Enhanced Power Line Safety Settings (EPSS) outages to all parties on service lists Rulemaking (R.) 18-10-007 and Investigation (I.) 15-08-019 and directly to the Director of SED. The reports include, at a minimum, the

[4] Footnotes have been omitted from this quotation.

information listed below. The cadence and content of the reports may be augmented at any time at the discretion of SED.

For every Fast Trip outage on a circuit:

- Total scope of customers impacted, include specifics for:
  - Number of medical baseline customers impacted;
  - Number of customers who rely on electricity to maintain necessary life functions impacted;
  - Number of well water customers impacted;
  - Number of schools impacted;
  - Number of hospitals impacted;
  - Duration;
  - Cause of outage, if known;
  - Efforts undertaken to clear lines and restore power within 60 minutes;
  - The total number of times that a circuit has experienced a Fast Trip event; and
  - Trends of scope and duration of outages on repeatedly impacted circuits.

2.1.7 Energy Safety Wildfire Mitigation Plan Quarterly Data Reports

Energy Safety's Data Guidelines (Data Guidelines) are provided for electrical corporations submitting quarterly data reports (QDR) to Energy Safety. The QDRs consist of geographic information system (GIS) and tabular wildfire mitigation data and support Energy Safety in its oversight of electrical corporations. The Data Guidelines set forth the required standards, schemas, and schedule for the submission of QDR and are published pursuant to Government Code section 15475.6.

The QDR includes detailed outage information including: (1) outage events caused and not caused by vegetation contact, and outage events on circuits with protective devices enabled (Table 2); (2) wire down events based on causes (Table 5); and (3) information regarding PSPS and fast-trip outages (Table 10). All of this information is provided quarterly in an Excel workbook to Energy Safety and made available to stakeholders and the public.

2.1.8 PG&E Electric Reliability Townhalls and Website

In addition to outage and reliability information provided to the Commission and/or other agencies, PG&E also makes outage and reliability information available to the public. For example, PG&E conducts an annual Electric Reliability Town Hall to provide customers with insight into the company's reliability performance in 2023. The sessions explain how PG&E measures reliability, what causes outages, the process for restoring outages and more information from PG&E's 2023 Annual Electric Reliability Report.

Customers are able to ask questions as part of the virtual event. PG&E's latest Electric Reliability Town Hall will occur on December 13, 2024.

In addition, PG&E's website provides for customers and the public information explaining how reliability is measured, PG&E's performance based on those measures, links to reliability reports, and a link to PG&E's Annual Reliability Report. This information is available at: https://www.pge.com/en/about/pge-systems/electric-systems/electric-reliability-reports.html.

2.1.9 U.S. Energy Information Administration's Annual Electric Power Industry Report

PG&E is a respondent to the U.S. Energy Information Administration's Annual Electric Power Industry Report. The report uses Form EIA-861 and Form EIA-861S to survey and collect data from distribution utilities, power marketers of electricity, and regulatory agencies. The report includes a variety of data, including reliability data, which PG&E provides annually by using the Form EIA-861. As described on the U.S Energy Information Administration's website, the reliability data that utilities provide are SAIDI and SAIFI metrics, along with the conditions under which these metrics were collected. Respondents are allowed to use IEEE standards or other methods. This report, and the reliability data provided, is available at: https://www.eia.gov/electricity/data/eia861/.

2.1.10 U.S. Department of Energy Electric Incident and Disturbance Report

The U.S. Department of Energy requires utilities to file an Electric Incident and Disturbance Report within certain specified time frames (ranging from one hour to one business day) after an electric incident or disturbance occurs. These incidents must be recorded in Form DOE-417 and include, but are not limited to, incidents such as physical attacks on infrastructure, cyber-attacks, complete operational failure, electrical system separation, and fuel supply emergencies. Information on these reports is available at: https://www.oe.netl.doe.gov/oe417.aspx.

2.2. Reporting to Customers – Data and information provided to customers during outages

PG&E's communications to customers during an outage vary, depending on the type of outage, the configuration of the circuit (in the cases of EPSS), and the overall posture of PG&E during the outage. PG&E deploys several methods to communicate with customers when they experience an outage, including via Customer Service Representatives, the PG&E website, social media, Customer Preference and Notification (CPAN) via email, text, or voice message, and Automated IVR telecom systems. When available, PG&E provides situational messaging up front on the toll-free numbers.

Accurate and timely customer outage communications are a vital component of improving customer satisfaction, especially during large events.

Table 1 below provides an overview of the types of outages and communications during these outages. This is followed by a more detailed discussion of outage communications.

Table 1: Overview of Outage Communications

	Outage Type	Pre-Event	In-Event
1	Non-Planned Blue Sky[5]	N/A	Initial disturbance notification[6]
			Outage verification notification with Estimated Time of Restoration (ETOR)
			ETOR update notifications if appropriate
			Restoration Notification
2	Non-Planned EPSS	N/A	Same as Non-Planned Blue Sky
3	Non-Planned Storm (OEC Activated for Wind, Snow, Fire, Heat, etc.) Category 1-3	N/A	Same automated notifications as Non-Planned Blue Sky plus ad hoc IVR notifications for no ETOR at end of day, long duration outage updates and special awareness
4	Non-Planned Storm (EOC Activated for Wind, Snow, Fire, Heat, etc.) Category 4-5	IVR, Text and Email to customers who have outages lasting 2 or more days during similar storms historically	Same automated notifications as Non-Planned Blue Sky plus ad hoc IVR notifications for no ETOR at end of day, long duration outage updates and special awareness
5	PSPS	Priority Notification	Power Off Notification
		PSPS Watch Notification	PSPS Update Notification
		PSPS Warning Notification	Weather All Clear Notification
		Pending Delay Notification	Power Restored Notification
		Cancellation Notification	

[5] A "blue sky" outage refers to a non-emergency outage.

[6] Notifications via interactive voice response (IVR), text, and e-mail unless otherwise indicated.

	Outage Type	Pre-Event	In-Event
6	Planned Outage	14-day advance letter	Outage Verification Notification with ETOR
		7-day advance Notification	ETOR Update Notifications if appropriate
		24-hour advance reminder Notification	Restoration Notification
		Potential cancellation Notification	
		Cancellation Notification	
7	Outages General		All In-Event outages include outage map on web with outage status and ETOR, Contact Center IVR for outage status and ETOR, and Contact Center live agent for outage status and ETOR

In the remainder of this Section 2.2, PG&E describes:

Section 2.2.1: Customer Outage Notifications for Blue Sky Outages (including EPSS Outages)

Section 2.2.2: Customer Outage Notifications for Non-Planned Storm/Severe Weather Outages

Section 2.2.3: Customer Outage Notifications for PSPS Events

Section 2.2.4: Customer Outage Notifications for Planned Outages

Section 2.2.5: Additional Information Provided to Customers After EPSS Outages

In addition to the communications described below, PG&E also has extensive and detailed outage information available to customers and the public on its website. This information is available at: https://www.pge.com/en/outages-and-safety.html.

2.2.1 Non-Planned Blue Sky Outages (including EPSS Outages)

PG&E attempts to provide customers with the following set of details on their specific outage, as soon information is available:

- Initial Disturbance Notification: PG&E lets the customer know we are acknowledging the current service interruption, the number of customers estimated to be impacted, and are working on assessing the cause.

- Cause of Outage: Once an assessment is complete, PG&E assessment coworkers provide information on the cause of the outage.

- Estimated Time of Restoration (ETOR): ETORs are provided to customers when available. ETORs and their accuracy are important components of customer satisfaction. As such, providing accurate ETORs are a key focus for outage dispatchers, assessment, and repair coworkers.

- Other Customer Comments: Customer Care teams can provide additional comments about an outage to a customer to convey additional information.

- Restoration: When power was restored.

Notifications also direct customers to PG&E's Outage Portal on the website (pge.com/outages) to view maps of impacted outage areas, customer support resources, and other outage-related information.

Additional information provided to customers during EPSS outages is described below in Section 2.2.5.

2.2.2 Non-Planned Storm/Severe Weather

In cases of severe weather/storm events, PG&E employs pre-notifications by email to customers that have been impacted by storms in the past resulting in extended outages. In addition, PG&E utilizes ad-hoc notifications where immediate assessment and estimated time of restoration notifications cannot be accomplished due to the extensive number of storm impacts on our system. These messages are deployed to select customers through consultation with our local field Operations teams by our Customer Strategy Officers in the local emergency operations centers.

2.2.3 PSPS Outages

PG&E shares information about a potential PSPS event with customers, agencies and stakeholders at specific timelines prior to the start of extreme weather. Notification content and information varies by customer segment, including specific messaging for Public Safety Partners, Access and Functional Needs customers, Critical Customers, and customers served by microgrids during a PSPS.

During PSPS outages, PG&E provides the following additional information:

- Specific location/account information of impacted service;

- Estimated time of shutoff expected to occur;
- Estimated time for weather to clear/improve;
- Estimated time of restoration;
- Web links (pge.com/pspsupdates), including:
    - Links to maps and detailed information online;
    - Customer Support Resources.

2.2.4 Planned Outages

To complete important equipment replacement, system hardening, and other work required to maintain the electric system, PG&E utilizes planned outages to safety complete critical upgrades and maintenance of our system. Customers receive communications 10 days in advance of a planned outage.

2.2.5. Additional Specific Information Provided After EPSS Outages

After EPSS outages, PG&E provides the following information to customers:

- Specific location/account information of impacted service;
- Outage cause, if available; and
- Enhanced engagement invites.

It is important to note that EPSS outages do not receive pre-notifications because they are unplanned outages.

2.3. Reporting to Customers – Data and information provided to customers about improvements to infrastructure servicing them

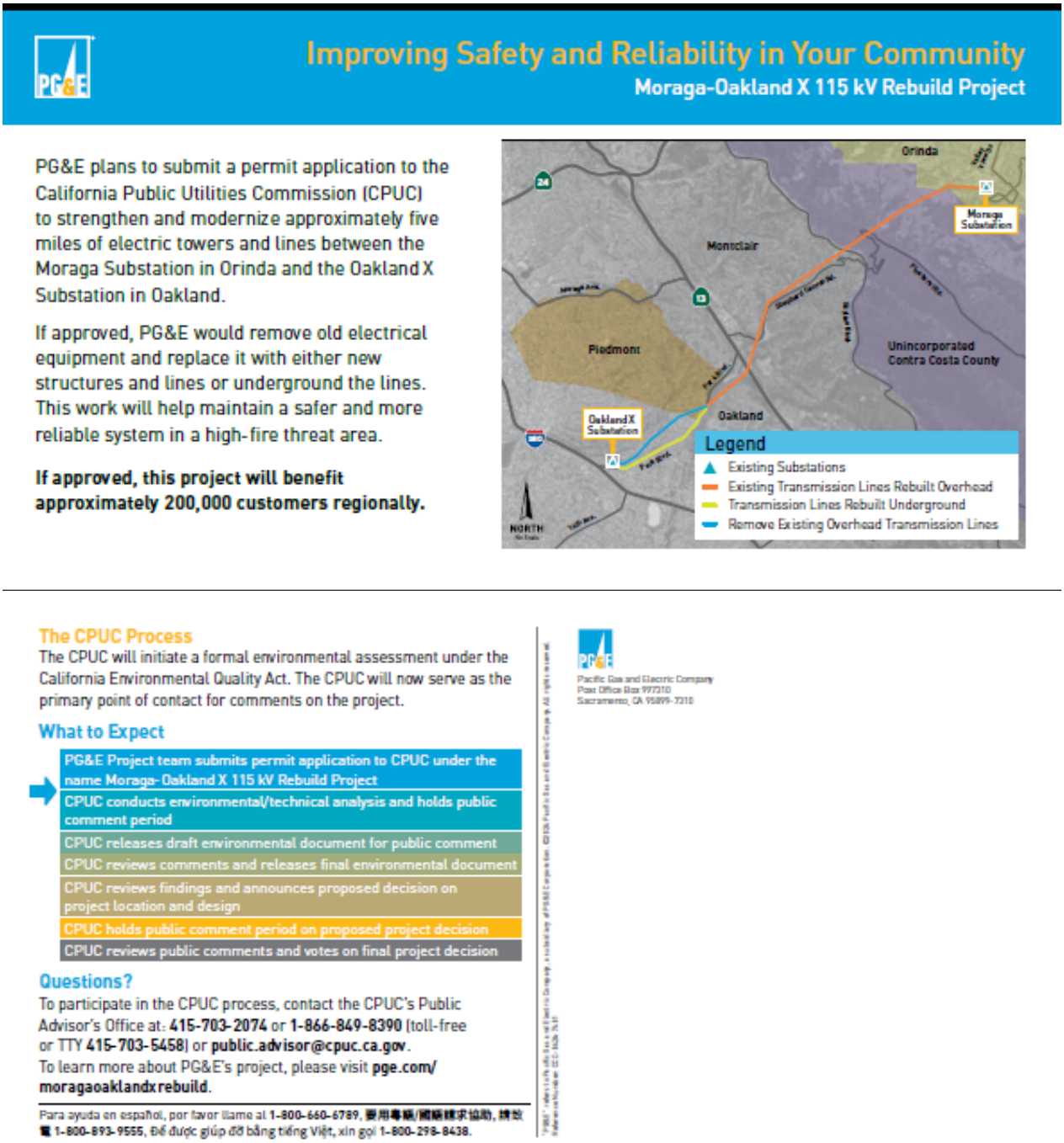
PG&E strives to ensure its customers are informed about our efforts to modernize and improve the energy grid. Each project's communication outreach plan varies depending on the scope, budget, and location. To keep customers informed, our communications usually include the following:

- Information regarding the work taking place, project timeline, where the work is taking place;
- What customers can expect; and
- A project contact for additional questions.

Common outreach methods can include project factsheets, doorhangers, direct mail, email, IVR, text messages, and signage. The approach that we use to communicate with customers depends on the customer's preferred channel of choice.

In addition to communicating about actual improvements that are being or will be undertaken, PG&E also communicates with customers about proposed infrastructure improvements. Figure 2 below is an example of the type of data and information that PG&E provides to customers about a proposed infrastructure improvements. In this case, the information concerns a proposed project that will be presented to the Commission for approval.

Figure 2: Customer Notification Regarding Infrastructure Improvements



2.4. Existing Data Dictionaries

The ALJ Ruling requested existing data dictionaries but did not define exactly the kind of dictionary that is requested. A data dictionary is generally defined as:

> A collection of names, definitions, and attributes about data elements that are being used or captured in a database, information system, or

> part of a research project. It describes the meanings and purposes of data elements within the context of a project, and provides guidance on interpretation, accepted meanings and representation. A Data Dictionary also provides metadata about data elements. The metadata included in a Data Dictionary can assist in defining the scope and characteristics of data elements, as well the rules for their usage and application.[7]

It was unclear, however, whether this is the definition of data dictionary that was envisioned by the ALJ Ruling and Commission Staff or a different kind of data dictionary was envisioned. With this in mind, PG&E provides the following response. We would be happy to work with the Administrative Law Judge (ALJ) Rizzo, Commission Staff, and stakeholders to develop a more detailed definition of data dictionary and then to provide to the Commission and stakeholders the requested information, if available.

First, PG&E maintains a general data dictionary in a tool called "Collibra." However, this data dictionary is extensive and involves thousands of lines of information and material. In Attachment C, PG&E provides a list of the outage associated tables in Collibra. These tables collectively include thousands of rows of defining data elements. The substantial volume of materials cannot be easily exported or included as an attachment to this response. However, if the information from Collibra would be helpful to the Commission and Commission Staff, PG&E would be happy to work with Commission Staff to review the Collibra data dictionary and identify materials that are relevant to this proceeding and to make this information available to the Commission and make public information available to stakeholders.

Second, if the Commission was looking for a higher-level dictionary of outage related terms, PG&E includes this in its Annual Report on Reliability. Included as Attachment D to these comments is a copy of the dictionary included in the Annual Report on Reliability.

Third, in addition to a high-level dictionary of outage related terms, many reports that PG&E prepares in response to regulatory requests include unique data dictionaries. For example, Table 10 in the QDR provided by PG&E to Energy Safety includes a column that specifically defines outage related data that should be included in the QDR. In some cases, these definitions are general terms, such as the calculation of SAIDI and SAIFI. In other cases, these definitions are unique, for example events which occur per circuit segment. PG&E is including as Attachment E a copy of Table 10 from the QDR template as an example of a potential "data dictionary" that is used for a specific and unique purpose.

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[7] UC Merced Library accessed at https://library.ucmerced.edu/data-dictionaries on December 9, 2024.

Finally, PG&E notes that Energy Safety has prepared its own data dictionaries for the reporting of data to Energy Safety, including outage and reliability data. Energy Safety's data dictionaries are available at: https://energysafety.ca.gov/who-we-are/department-organization/data-analytics-division/.

3. Reporting Enhancements

Given the extensive and detailed outage and reliability reporting described above, as well as the robust customer notification process currently used by PG&E, we do not at this time have any proposed reporting enhancements. However, we look forward to working with the Commission and stakeholders if there is additional, material information that could be provided to the Commission, stakeholders, and customers. Equally as important, we look forward to working with the Commission and stakeholders to streamline the reporting process, where appropriate, so as to reduce the amount of resources and corresponding costs borne by customers for outage and reliability reporting and notifications.

4. Proposed Thresholds for Reporting

PG&E is not proposing any change to the current outage and reliability reporting thresholds.

5. Proposals to Align and enhance timing of reporting cycle

PG&E is not proposing any change to the current outage and reliability reporting cycle or timing.

6. Maintenance and modification of the outage data set

PG&E is not proposing any change to the current maintenance of outage data.

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ATTACHMENT B

Attachment B
ALJ Ruling Questions

1. What enhancements and/or updates should the Commission request for utility reporting requirements and data submissions on the following areas: electric outages, circuit info, and extreme events?

As explained in the introduction to Attachment A, given the already extensive and detailed reporting to regulators and notification process to customers, PG&E does not recommend any enhancements and/or updates for utility reporting requirements and data submissions regarding electric outages, circuit information, and/or extreme events.

PG&E does see this proceeding as an opportunity for stakeholders to acknowledge the paradigm shift presented by wildfire mitigation efforts which change the operational mode in large portions of California. Performance can vary widely across regions due to localized weather patterns and should be considered for proposed changes to reporting requirements.

PG&E notes that changes or additional reporting requirements will necessitate additional resources and employee time. Given the affordability challenges for all California utilities, PG&E would strongly urge the Commission to carefully consider whether the benefits of additional outage and reliability reporting outweigh the additional costs that will be borne by customers to facilitate this reporting.

2. What thresholds or revisions to thresholds, if any, should be established to define reasonable reliability performance given weather conditions? For example, according to General Order 166,[8] restoration time is presumed reasonable during a major outage if the event's Customer Average Interruption Index (CAIDI) is below 570 minutes.

PG&E does not have any recommended thresholds or revisions to thresholds that define reasonable reliability performance due to given weather conditions. Currently the Major Event Day (MED) threshold is being used to determine if a certain day is excludable. This follows the standard Institute of Electrical and Electronic Engineers (IEEE) language that authorizes the use of MED threshold to exclude certain days as Major Event Days.

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[8] General Order 166: Standards for Operation, Reliability, and Safety During Emergencies and Disasters: California Public Utilities Commission (2021, May 20). *General Order 166*, available at: https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M464/K730/464730514.pdf.

However, PG&E does recommend that specific exclusion criteria be considered for PSPS events so that these events can be treated similarly to MEDs for reliability metrics calculations. The exclusion criteria should consider the timeframe of the event from start to finish, the numbers of customers impacted, the timing of individual circuit deenergization events, and the overall duration of the event. Proper exclusion criteria will promote targeted, small-scale PSPS events without impacting reliability metrics.

PSPS events are operational decisions that are made when the benefits of proactive deenergization outweigh the risk of a potential wildfire. These events do not reflect reasonable reliability performance during weather conditions that drive wildfire potential since they are risk mitigations enacted at the cost of reliability. Additionally, the reliability impact of an avoided wildfire likely would meet the MED threshold and thus be excluded.

3. **What data, data sets, and reporting requirements could aid the Commission in increasing the prioritization of equity for purposes of outage reporting? Examples of equity indices/data include but are not limited to: income, rent/mortgage, Medical Baseline Program customer or vulnerable customers who rely on electricity to operate life-support equipment, tools such as CalEnviroScreen,[9] Healthy Places Index[10] or Climate & Economic Justice Screening Tool,[11] or others as needed.**

The Annual Reliability Report includes extensive outage and reliability data broken down by Divisions within PG&E's service territory. Making this data more granular, for example for certain types of customers (*e.g.,* Medical Baseline Program) or based on certain screening tools, would require substantial time and resources. In addition, some of the information suggested (*e.g.*, income and rent/mortgage) is not readily available to PG&E and PG&E would be required to use available public sources, which may or may not be accurate or up to date. Given the detail and extensive work required, PG&E does not recommend more granular reporting requirements for outage and reliability data.

4. **What additional data should be shared with customers before, during, and after outages above what is currently available through customer outage portals and other customer outage communication channels? Please respond**

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[9] California Office of Environmental Health Hazard Assessment (2023, May 1). *CalEnviroScreen 4.0*, available at: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40.

[10] Public Health Alliance of Southern California (n.d.). *Healthy Places Index*. California Healthy Places Index, available at https://www.healthyplacesindex.org/.

[11] Council on Environmental Quality (n.d.). *Explore the map - Climate and Economic Justice Screening Tool*. Climate and Economic Justice Screening Tool, available at: https://screeningtool.geoplatform.gov/.

for outages for planned and unplanned events and for "blue-sky"[12] days and specific reliability events such as Public Safety Power Shutdowns (PSPS), and outages associated with Fast Trip setting-related outages (also known as Enhanced Powerline Safety Settings, Fast Curve, and Sensitive Relay Profile),[13] Major Event Days, etc.

As described in Attachment A, Section 2.2, PG&E currently provides extensive and detailed outage information to customers before, during, and after an outage. Given this extensive communication, PG&E does not have any proposal for additional information that should be provided.

5. What data and reporting requirements identify impacts on environmental and social justice communities, including the extent to which data definitions for outage reporting impact the achievement of any of the nine goals of the Commission's Environmental and Social Justice Action Plan?[14]

The Commission's current outage and reliability reporting requirements do not include specific reporting on the impacts of outages on environmental and social justice communities. Instead, the Commission's current reporting requirements focus on impacts to all customers affected by an outage, including environmental and social justice communities. PG&E does not have any specific proposal for modifying the Commission's existing reporting requirements but is ready to work with stakeholders on outage and reliability reporting proposals that would be consistent with the Commission's nine goals for environmental and social justice.

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[12] Blue sky conditions refer to a normal, routine operating day for an electrical corporation.

[13] California Public Utilities Commission (n.d.). *Enhanced Powerline Safety Settings*, available at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/fact-sheets/epss-fact-sheet.pdf.

[14] California Public Utilities Commission (2022, April 7). *Environmental and Social Justice Action Plan - Version 2.0*, available at: https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/news-and-outreach/documents/news-office/key-issues/esj/esj-action-plan-v2jw.pdf.

PACIFIC GAS AND ELECTRIC COMPANY

ATTACHMENT C

Attachment C
Collibra Tables

outage_log_clean
dms_pge_outages_histroical_updated_clean
pge_outages_web_rest_clean
pge_outages_historical_cleam
pge_outages_incremental_clean
pge_fl_latlong_clean
hfra_clean
station_root_object
synoptic_time_series_data_scheduled_sampling
palantir_eleclocaloffice_clean
elecsnowloadingarea_clean
city_tot_anex_clean
subinterruptingdevice_clean
outage_fault_type_clean
outage_cause_basic_clean
outage_cause_equip_cond_clean
outage_cause_equip_stat_clean
outage_environmental_processed
elecdivision_clean
historicpeakwind_clean
out_xfmr_clean
outage_association_clean
outage_cause_supplemental_clean
palintir_highfirethreatdist_clean
all_transformers_clean
pge_outages_snapshot_clean

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ATTACHMENT D

10. Appendix A – Definitions, Acronyms & Abbreviations

AIDI – Average Interruption Duration Indices

AIFI – Average Interruption Frequency Indices for sustained outages only

Customer: A metered electrical service point for which an active bill account is established at a specific location.

CAIDI: Customer Average Interruption Duration Index - The Customer Average Interruption Duration Index (CAIDI) represents the average time required to restore service.

CESO: A term that counts the number of Customers Experiencing Sustained Outages.

DART – Distribution Asset Reconciliation Tools – a distribution asset database used by PG&E.

DCD – Downed Conductor Detection scheme

Distribution system: That portion of an electric system that delivers electric energy from transformation points on the transmission system to the customer. PG&E defines its distribution system as line voltage less than 60 kilovolts (kV). The distribution system is generally considered to be anything from the distribution substation fence to the transformer prior to stepping down the voltage to the customer premise.

EPSS – Enhanced Powerline Safety Scheme

ILIS – Integrated Logging and Information System – The tool PG&E's distribution operators use to log electric outages.

ISO: The California Independent System Operator. The ISO operates the transmission system throughout most of the State of California, including throughout PG&E's service territory.

Major Event: Designates an event that exceeds reasonable design and or operational limits of the electric power system. A Major Event includes at least one Major Event Day. *See also:* **Major Event Day**.

Major Event Day (MED): A day in which the daily system, System Average Interruption Duration Index (SAIDI) exceeds a Major Event Day threshold value. For the purposes of calculating daily system SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began.

MAIFI: Momentary Average Interruption Frequency Index

The Momentary Average Interruption Frequency Index (MAIFI) indicates the average frequency of momentary interruptions. PG&E's momentary outage reporting tools were originally designed to track momentary outages based on D96-09-045. As provided in D.16-01-008, the provided MAIFI metric is the same as what PG&E has used in its prior annual reliability reports and corresponds to the $MAIFI_E$ definition contained in the IEEE Guide for Electric Power Distribution Reliability Indices (IEEE 1366 standard), which counts multiple outage interruptions that occur close to each other in time as a single momentary outage event. This metric is equal to the total number of customer momentary interruption events divided by the total number of customers served and does not include the events immediately preceding a sustained interruption.

Momentary interruption: The brief (five minutes or less) loss of power delivery to one or more customers caused by the opening and closing operation of an interrupting device**.**

Non-Restorable Outage Process – PG&E utilizes a non-restorable outage designation and process for unique outage events involving requests by customers or agencies requiring that facilities be de-energized, access not permitted, and/or restoration be delayed due to circumstances not initiated or controlled by PG&E. This process includes adjusting the outage minutes to accurately reflect these situations and to measure PG&E's actual true performance.

ODB – Operations Database - ODB is the outage database for PG&E

Planned outage: The intentional disabling of a component's capability to deliver power, done at a preselected time, usually for the purposes of construction, preventative maintenance, or repair.

SAIDI: System Average Interruption Duration Index

The System Average Interruption Duration Index (SAIDI) indicates the total duration of interruption for the average customer during a predefined time period. It is commonly measured in minutes or hours of interruption.

SAIFI: System Average Interruption Frequency Index

The System Average Interruption Frequency Index (SAIFI) indicates how often the average customer experiences a sustained interruption over a predefined time period.

SCADA: Supervisory Control and Data Acquisition – an online database for distribution operators to remotely gather information and control the distribution system.

Sustained interruption: Any interruption not classified as a part of a momentary event. That is, any interruption that lasts more than five minutes.

Unplanned interruption: The loss of electric power to one or more customers that does not result from a planned outage.

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ATTACHMENT E

Energy Safety Data Guidelines, Appendix D
Wildifire Mitigation Data Tables Template: Tables 1 - 15

Update the below table to establish which reporting period this submission this represents.

Utility Name	X
First year of 3-year WMP cycle	2023
Reporting Period year	2024
Reporting Period quarter	Q1
Date Modified	#REF!

Utility	X
Table No.	10
Date Modified	

Notes:
"PSPS" = Public Safety Power Shutoff
In future submissions update planned upgrade numbers with actuals

Table 10: Recent use of PSPS and other PSPS metrics

				Actual	Projected					
Metric type	**#**	**Wind Warning Status**	**Metric name**	Q1 **2024**	**2023**	**2024**	**2025**	**Unit(s)**	**Comments**	**Blank Meaning**
1. Recent use of PSPS and fast-trip	1.a.	RFW only	Frequency of PSPS events (total)					Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability, per year		
		HWW only	Frequency of PSPS events (total)					Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability, per year		
		HWW & RFW	Frequency of PSPS events (total)					Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability, per year		
		All (regardless of RFW/HWW status)	Frequency of PSPS events (total)					Number of instances where utility operating protocol requires de-energization of a circuit or portion thereof to reduce ignition probability, per year		
	1.b.	RFW only	Scope of PSPS events (total)					Circuit-events, measured in number of events multiplied by number of circuits de-energized per year		
		HWW only	Scope of PSPS events (total)					Circuit-events, measured in number of events multiplied by number of circuits de-energized per year		
		HWW & RFW	Scope of PSPS events (total)					Circuit-events, measured in number of events multiplied by number of circuits de-energized per year		
		All (regardless of RFW/HWW status)	Scope of PSPS events (total)					Circuit-events, measured in number of events multiplied by number of circuits de-energized per year		
	1.c.	RFW only	Duration of PSPS events (total)					Customer hours per year		
		HWW only	Duration of PSPS events (total)					Customer hours per year		
		HWW & RFW	Duration of PSPS events (total)					Customer hours per year		
		All (regardless of RFW/HWW status)	Duration of PSPS events (total)					Customer hours per year		
	1.d.	RFW only	Frequency of fast-trip events (total)					Number of events		
		HWW only	Frequency of fast-trip events (total)					Number of events		
		HWW & RFW	Frequency of fast-trip events (total)					Number of events		
		None	Frequency of fast-trip events (total)					Number of events		
	1.e	RFW only	Circuit mile days with fast-trip settings enabled (total)					Circuit mile days		
		HWW only	Circuit mile days with fast-trip settings enabled (total)					Circuit mile days		
		HWW & RFW	Circuit mile days with fast-trip settings enabled (total)					Circuit mile days		
		None	Circuit mile days with fast-trip settings enabled (total)					Circuit mile days		
2. Customer hours of PSPS and other outages	2.a.	N/A	Customer hours of planned outages including PSPS (total)					Total customer hours of planned outages per year		
	2.b.	N/A	Customer hours of unplanned outages, not including PSPS or fast-trip (total)					Total customer hours of unplanned outages, not including PSPS or fast-trip, per year		
	2.c.	N/A	Customer hours of unplanned outages resulting from fast-trip					Total customer hours of outages due to fast-trip per year		
	2.d.	N/A	System Average Interruption Duration Index (SAIDI) (including PSPS)					SAIDI index value = sum of all interruptions in time period where each interruption is defined as sum(duration of interruption * # of customer interruptions) / Total number of customers served		
	2.e.	N/A	System Average Interruption Duration Index (SAIDI) (excluding PSPS)					SAIDI index value = sum of all interruptions in time period where each interruption is defined as sum(duration of interruption * # of customer interruptions) / Total number of customers served		
	2.f.	N/A	System Average Interruption Frequency Index (SAIFI) (including PSPS)					SAIFI index value = sum of all interruptions in time period where each interruption is defined as (total # of customer interruptions) / (total # of customers served)		
	2.g.	N/A	System Average Interruption Frequency Index (SAIFI) (excluding PSPS)					SAIFI index value = sum of all interruptions in time period where each interruption is defined as (total # of customer interruptions) / (total # of customers served)		
3. Critical infrastructure impacted by PSPS	3.a.	N/A	Critical infrastructure impacted by PSPS					Number of critical infrastructure (in accordance with D.19-05-042) locations impacted per hour multiplied by hours offline per year		
4. Community outreach of PSPS metrics	4.a.	N/A	# of customers impacted by PSPS					# of customers impacted by PSPS (if multiple PSPS events impact the same customer, count each event as a separate customer)		

Utility	X
Table No.	10
Date Modified	

Notes:
"PSPS" = Public Safety Power Shutoff
In future submissions update planned upgrade numbers with actuals

Table 10: Recent use of PSPS and other PSPS metrics

				Actual	Projected					
Metric type	**#**	**Wind Warning Status**	**Metric name**	Q1 **2024**	**2023**	**2024**	**2025**	**Unit(s)**	**Comments**	**Blank Meaning**
4. Community outreach of PSPS metrics	4.b.	N/A	# of medical baseline customers impacted by PSPS					# of customers impacted by PSPS (if multiple PSPS events impact the same customer, count each event as a separate customer)		
4. Community outreach of PSPS metrics	4.c.	N/A	# of customers notified prior to initiation of PSPS event					# of customers notified of PSPS event prior to initiation (if multiple PSPS events impact the same customer, count each event in which customer was notified as a separate customer)		
4. Community outreach of PSPS metrics	4.d.	N/A	# of medical baseline customers notified prior to initiation of PSPS event					# of customers notified of PSPS event prior to initiation (if multiple PSPS events impact the same customer, count each event in which customer was notified as a separate customer)		
4. Community outreach of PSPS metrics	4.e.	N/A	# of customers notified prior to a PSPS event impacting them					# of customers impacted customers who were notified prior to PSPS initiation (if multiple PSPS events impact the same customer, count each event in which customer was notified as a separate customer)		
4. Community outreach of PSPS metrics	4.f.	N/A	# of medical baseline customers notified prior to a PSPS event impacting them					# of customers impacted customers who were notified prior to PSPS initiation (if multiple PSPS events impact the same customer, count each event in which customer was notified as a separate customer)		
5. Other PSPS metrics	5.a.	N/A	Number of PSPS events in which a notification was sent but no de-energization occurred					Number of events		
	5.b.	N/A	Average number of customers located on de-energized circuit					Number of customers		
	5.c.	N/A	Customer hours of PSPS per RFW OH circuit mile day					=1.c. / RFW OH circuit mile days in time period		
		N/A	Customer hours of PSPS per HWW OH circuit mile day					=1.c. / HWW OH circuit mile days in time period		
		N/A	Customer hours of PSPS per high FPIOH circuit mile day					=1.c. / FPI OH circuit mile days in time period		
	5.d.	N/A	Median time between de-energization, due to PSPS, and inspection of a circuit segment					Time between de-energization and inspection on a circuit-segment basis in hours		
	5.e.	N/A	95 percentile of time between de-energization, due to PSPS, and inspection of a circuit segment					Time between de-energization and inspection on a circuit-segment basis in hours		
	5.f.	N/A	Median time between de-energization, due to fast-trip, and inspection of a circuit segment					Time between de-energization and inspection on a circuit-segment basis in hours		
	5.g.	N/A	95 percentile of time between de-energization, due to fast-trip, and inspection of a circuit segment					Time between de-energization and inspection on a circuit-segment basis in hours		
	5.h.	N/A	Number of risk events occurring on a de-energized circuit					Number of risk events		