

PACIFIC GAS AND ELECTRIC COMPANY
Wildfire Mitigation Plans Discovery 2023-2025
Data Response

PG&E Data Request No.:	SPD_016-Q015		
PG&E File Name:	WMP-Discovery2023-2025_DR_SPD_016-Q015		
Request Date:	May 30, 2024	Requester DR No.:	SPD_WSPS_PG&E_2024_006
Date Sent:	June 18, 2024	Requesting Party:	Safety Policy Division
PG&E Witness:		Requester:	Henry Sweat

SUBJECT: REQUEST FOR CONFIDENTIAL FILES

QUESTION 015

These questions are based off the Pole Loading Assessment work described in Section 8.1.3.2.4 of "TN13804_20240402T112956_PGE's_20232025_Wildfire_Mitigation_Plan_Revision_5.pdf."

- a. Provide summary statistics for the pole calculations already performed including:
 - i. Number of pole calculations performed in the HFTD
 - ii. Number of pole calculations remaining in the HFTD
 - iii. Number of poles where the calculated safety factor was less than the safety factor specified by GO-95, Rule 44.1, Table 4 in the HFTD
 - iv. Number of poles where the calculated safety factor was less than the safety factor specified by GO-95, Rule 44.3 in the HFTD
 - v. Number of poles where the calculated safety factor was less than the safety factor specified by GO-95, Rule 44.1, Table 4 in the HFTD despite no strength deterioration being incorporated into the calculation.
 - vi. Number of poles where the calculated safety factor was less than the safety factor specified by GO-95, Rule 44.3 in the HFTD despite no strength deterioration being incorporated into the calculation.
 - vii. Provide the same information for poles not located in the HFTD.
- b. Provide an updated completion date for the program for both HFTD and non-HFTD areas.
- c. When the calculated safety factor is less than the safety factor specified by GO-95, Rule 44.1, Table 4 or GO-95, Rule 44.3, discuss typical root causes.
- d. Describe how this information related to the pole loading assessment is profiled to inspectors performing inspections.
- e. Provide the loading criteria used for the pole loading assessments.
- f. Describe how the pole loading assessments incorporate the intrusive inspection data from the Pole Test and Treat program, and how the Pole Test and Treat program will incorporate the pole loading data when performing inspections.

- g. Describe how the pole loading assessments incorporate observations from system inspections, such as leaning or damaged poles.
- h. Describe PG&E's actions when the calculated safety factor for a pole is less than the safety factor specified by GO-95, Rule 44.1, Table 4 and separately when the calculated safety factor for a pole is less than the safety factor specified by GO-95, Rule 44.3.
- i. Discuss calculations performed on crossarms and conductors, and provide similar data as requested in part (a).
- j. Provide "WMP-Discovery2023_DR_CalAdvocates_032-Q008Atch01CONF.zip." If one of these poles calculations does not include a pole calculation with a down guy, provide a randomly chosen pole calculation with a down guy.
- k. Explain how the tensions from both vertical and horizontal loads in the conductors are calculated, especially when adjacent spans are not the same length, do not have the same sag, or are not at the same elevation.
- l. Discuss which measurements used in the pole loading assessments are provided by LIDAR, and what other sources of measurements are used in the assessments.
 - i. What is the accuracy of the LIDAR being used?
 - ii. What is the max range of the LIDAR? iii. What does PG&E use for measurements for assessments where LIDAR cannot obtain suitable measurements?
- m. Describe any calculations performed related to deflections, pole foundations, clearances between conductors, and aeolian vibrations.

ANSWER 015

- a. The Pole Loading Assessment (PLA) Program began in 2020 and conducted a desktop-based assessment of the pole loading by utilizing the pole attributes from EDGIS and LiDAR data. The PLA Program is above and beyond the requirements in GO 95, Rule 44, because no work is occurring at the poles as part of the PLA Program, so no new installation or reconstruction requires Pole Loading Calculations (PLCs). PG&E is performing proactive pole loading assessments to risk-prioritize maintenance and remediation of in-service poles.

The PLA desktop-based assessments are performed by a team of data analysts. These assessments highlighted higher risk poles that need further engineering analysis. The higher risk poles are currently being prioritized for a comprehensive engineering analysis (which includes field validation, where needed). Once this analysis is completed, we will have the Safety Factor (SF) for the poles.

- i. The PLA Program completed desktop-based assessments on approximately 530,000 poles in HFTD areas. The pole loading for the remaining poles in HFTD areas has been assessed through other programs, such as system hardening.
- ii. No poles are remaining in HFTD areas for the PLA Program.
- iii. PG&E is currently prioritizing the higher risk poles for a comprehensive engineering analysis (which includes field validation, where needed). thus, the

- requested SFs are not yet available but will be available after this analysis is complete.
- iv. Please see the response to subpart a(iii) above which explains our process and why the requested information is not yet available.
 - v. Please see the response to subpart a(iii) above which explains our process and why the requested information is not yet available.
 - vi. Please see the response to subpart a(iii) above which explains our process and why the requested information is not yet available.
 - vii. PG&E has not started assessing poles in non-HFTD areas.
- b. Please see the response to subpart (a) above for the status of poles in HFTD areas. As stated in subpart a(vii), PG&E has not yet started assessing poles in non-HFTD areas.
 - c. Please see the response to subpart (a) above for an explanation of the status of this work. PG&E is in the beginning stages of understanding the causes and influences of overload conditions through the comprehensive engineering analysis of higher risk poles.
 - d. Once the comprehensive engineering analysis is complete, the pole will either be determined to be overloaded or not overloaded. If the pole is determined to be overloaded and in need of remediation, an Electric Corrective (EC) notification will be created to perform the remediation activities through the maintenance program. Inspectors have visibility of the open EC notifications for the inspection locations.
 - e. Please see the response to subpart a(iii) above. PG&E is in the beginning stages of performing comprehensive engineering analysis of the higher risk poles.
 - f. The pole loading assessments incorporate the remaining strength captured during the most recent intrusive inspection.
 - g. Minor physical damage on the pole does not significantly impact the pole loading. In addition, pole leaning is typically indicative of a pole foundation issue or improper guying. As such, these types of conditions are entered directly into the maintenance program for remediation via an EC notification.
 - h. Please see the response to subpart a(iii) above. PG&E is in the beginning stages of performing comprehensive engineering analysis of the higher risk poles.
 - i. PG&E does not perform such calculations as part of the PLA Program.
 - j. Please see attachment "*WMP-Discovery2023_DR_CalAdvocates_032-Q008Atch01CONF.zip*" for the requested information. Multiple poles included in this zip file have down guys.
 - k. O-Calc Pro considers both vertical and horizontal loading of all components modeled on the pole, which includes conductors, framing equipment, OH equipment, etc. In addition, the span lengths, angles, height of attachments and elevations are calculated leveraging EDGIS positions, which are derived from the LiDAR data. Further, O-Calc Pro's conductor tensions are configured based on PG&E's Standards, which are based on new installations and do not account for relaxation while in-service.

- l. The position of the pole is derived from EDGIS, which is based on LiDAR data. As discussed in subpart k, the span lengths, angles, heights of attachments and elevations are calculated leveraging EDGIS position, which are derived from the LiDAR data as well. Additional data, such as framing and OH equipment are observed from recently collected field inspection photographs.
 - i. PG&E uses multiple types of LiDAR (aerial: rotary (helicopter) and fixed wing, and ground: vehicle). The accuracy of the LiDAR is dependent on the vintage (year collected), as well as the method of collection. The expectation is that the position of the pole is +/- 3 feet in EDGIS, as derived from the LiDAR data.
 - ii. Please see the response to subpart l(i) above for the requested information.
 - iii. The PLA Program leverages pole positions from EDGIS, which is based on LiDAR data. Additional data, such as framing and OH equipment are observed from recently collected field inspection photographs. If there is crucial data missing, the team can send someone to the field to gather the required information for performing the PLC.
- m. PG&E does not perform these calculations as part of the PLA Program.