

PACIFIC GAS AND ELECTRIC COMPANY
10-Year Electrical Undergrounding Plan (EUP)
Data Response

PG&E Data Request No.:	MGRA_002-Q005
PG&E File Name:	EUP-Phi_DR_MGRA_002-Q005
Request Date:	October 12, 2026
Requester DR No.:	002
Requesting Party:	Mussey Grade Road Alliance
Requester:	Joseph Mitchell
Date Sent:	October 16, 2026
PG&E Responsible Person(s):	Justin Sadler; Yumi Oum

Mitigation Effectiveness Analysis

QUESTION 005

Repeat the 2024 analysis performed for Data Request RAMP 2024_DR_TURN_006-Q004, in particular Table 1, showing the amount of covered conductor deployed and facility ignitions, updating this data to the end of September 2024. Likewise repeat the effectiveness calculation for covered conductor performed in DR_TURN_006-Q004 showing details.

ANSWER 005

PG&E interprets this request to ask for updated data as of September 2026.

Please see the table below for the requested updated analysis:

Metric	2018	2019	2020	2021	2022	2023	2024	2025	2026 YTD	Total
Deployed Covered Conductor miles*	15.8	145	334.5	146.8	334.6	144.8	108.1	206.9	265	1,701.05
Deployed Covered Conductor cumulative miles*	15.8	160.7	495.2	642.0	976.7	1,121.5	1,229.6	1,436.5	1,701.5	1,701.5
All facility Ignitions associated with Distribution lines in HFTD / HFRA**	247	176	194	200	123	108	145	85	84	879

All CPUC RFIs associated with Distribution lines in HFTD / HFRA **	146	114	138	130	85	58	94	55	59	1362
Facility Ignitions associated with Overhead Covered Conductor Distribution lines in HFTD / HFRA **	0	0	0	1	1	2	1	0	0	5
CPUC RFI associated with Overhead Covered Conductor Distribution lines in HFTD / HFRA **	0	0	0	1	1	0	0	0	0	2

*minor variations in previously reported values from the original RAMP 2024_DR_TURN_006-Q004 Table 1 are due to final validations during project closure and rounding during calculations

** The results presented above were generated using data as of 10/15/2026. Some differences may exist between these results and previously reported figures. These variances may be attributable to historical updates to the underlying data, differences in reporting methodology, or changes to HFTD/HFRA boundaries over time.

Based on the above data, PG&E has estimated a covered conductor mitigation effectiveness of 87.9 percent. This is done by comparing ignitions observed on bare vs. covered conductor during the 2018 to 2026 YTD period as set forth below.¹

$$\text{Effectiveness} = 1 - (\hat{p}_{\text{Covered}}) / (\hat{p}_{\text{Bare}}) = 1 - 0.077\% / 0.629\% = 87.8\%¹$$

The details of the effectiveness calculation are provided in Appendix A.

PG&E reiterates that it is inappropriate to use the above calculation for the reasons stated in response to subparts (a) and (b) of the referenced RAMP response, provided for reference here as “EUP-Phi_DR_MGRA_002-Q005Atch01.pdf.”

In addition to the reasons stated in “EUP-Phi_DR_MGRA_002-Q005Atch01.pdf,” a simple count of observed ignitions on covered conductor circuits is not an appropriate way to estimate covered conductor effectiveness because it does not account for PG&E's other wildfire mitigations that operate on the same facilities, particularly Public

¹ PG&E participates in the Joint CC Effectiveness Study to better understand the advantages, operative failures modes, and current state of knowledge regarding covered conductors. Based on the latest update, using data through 2022, the estimated effectiveness is 64 percent. This is consistent with the previous results that were completed using data through 2020. See Joint IOU Covered Conductor Working Group Report. A copy of the report is provided as Attachment 2023-03-27 to PG&E's 2023 WMP. (Attachment 2023-03-27_PGE_2023_WMP_R0_Appendix D ACI PG&E-22-11_Atch01.)

Safety Power Shutoff (PSPS) and Enhanced Powerline Safety Settings (EPSS). On the highest-risk days that meet PSPS criteria, PG&E de-energizes facilities in the affected areas, including covered conductor. Accordingly, ignitions involving those facilities that might have occurred under the most severe conditions are not reflected in the observed ignition counts. Similarly, EPSS quickly de-energizes a line when a fault is detected, which reduces the likelihood that a fault results in an ignition. Because these mitigations work together, their individual effects cannot be separated in a simplified count of observed ignitions like the one requested, and this significantly impacts the results of this calculation.

Appendix A

Details of the effectiveness calculation

Defining the key variables for the calculation:

- F_{Covered} – Facility Ignitions on Covered Conductors
 - F_{Bare} – Facility Ignitions on Bare Conductors
 - M_{Total} – Total Distribution miles (includes covered, bare and undergrounded that were operational through the sample period of 8.75 years in HFTD / HFRA from 2018 through 2026 year-to-date)
 - T – Time period in years between 2018 and YTD 2026
 - n_{Covered} – Number of Covered Conductor mile-years over the 8.75 years
 - n_{Bare} – Number of Bare Conductor mile-years over the 8.75 years
 - $n_{\text{Undergrounded}}$ – Number of Undergrounded mile-years over the 8.75 years
 - n_{Total} – Number of Total mile-years over the 8.75 years
 - $\hat{p}_{\text{Covered}}$ – Facility ignition rate (per mile-year) of Covered Conductors
 - $\hat{p}_{\text{Bare}}$ – Facility ignition rate (per mile-year) of Bare Conductors

Input Variables:

- $F_{\text{Covered}} = 5$ (as shown in Table 1)
- $F_{\text{Bare}} = 1,357$ (as shown in Table 1)
- $M_{\text{Total}} = 25,655$
- $T = 8.5$ years

Calculated Variables:

- $n_{\text{Total}} = M_{\text{Total}} \times T = 25,655 \times 8.75 = \mathbf{224,481}$ mile-years
- n_{Covered} is calculated as follows: For each year, the number of covered conductors installed that year, multiplied by the number of years from the mid-point of the installation year² until end-of-sample (i.e., counting 2026 year-to-date as 0.75 years).

$$\begin{aligned} & \underbrace{15.8 \times 8.25}_{2018} + \underbrace{145.0 \times 7.25}_{2019} + \underbrace{334.5 \times 6.25}_{2020} + \underbrace{146.8 \times 5.25}_{2021} + \underbrace{334.6 \times 4.25}_{2022} + \\ & \underbrace{144.8 \times 3.25}_{2023} + \underbrace{108.1 \times 2.25}_{2024} + \underbrace{206.9 \times 1.25}_{2025} + \underbrace{265 \times 0.25}_{2026} = \mathbf{6,503} \text{ mile-years.} \end{aligned}$$

- $n_{\text{Undergrounded}}$ - is similarly calculated as:

$$\begin{aligned} & \underbrace{5.5 \times 7.25}_{2019} + \underbrace{25.6 \times 6.25}_{2020} + \underbrace{33.9 \times 5.25}_{2021} + \underbrace{99.4 \times 4.25}_{2022} + \underbrace{236.4 \times 3.25}_{2023} + \underbrace{178.0 \times 2.25}_{2024} + \\ & \underbrace{276.3 \times 1.25}_{2025} + \underbrace{224.9 \times 0.25}_{2026} = \mathbf{2,371} \text{ mile-years} \end{aligned}$$

² Approximating that the installation was at a constant rate over the year

- $n_{\text{Bare}} = n_{\text{Total}} - n_{\text{Covered}} - n_{\text{Undergrounded}} = 224,481 - 6,503 - 2,371 = \mathbf{215,607}$
mile-years
- $\hat{p}_{\text{Covered}} = \frac{F_{\text{Covered}}}{n_{\text{Covered}}} = \frac{5}{6,503} = \mathbf{0.077\%}$
- $\hat{p}_{\text{Bare}} = \frac{F_{\text{Bare}}}{n_{\text{Bare}}} = \frac{1,357}{215,607} = \mathbf{0.629\%}$
- $\text{Effectiveness} = 1 - (\hat{p}_{\text{Covered}})/(\hat{p}_{\text{Bare}}) = 1 - 0.077\%/0.629\% = \mathbf{87.8\%}$