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

PG&E Data Request No.:	MGRA_003-Q003
PG&E File Name:	EUP-PhI_DR_MGRA_003-Q003
Request Date:	October 19, 2026
Requester DR No.:	003
Requesting Party:	Mussey Grade Road Alliance
Requester:	Joseph Mitchell
Date Sent:	October 22, 2026
Responsible Person(s):	Justin Sadler

Subject: Hardening

QUESTION 003

Table PCS-6 shows the risk reduction of overhead hardening as 67% for balloons and 57% for covered conductor line slap. PG&E's previous WMP filing (pp. 191-194) shows that these risk reduction values were much higher.

a. What accounts for the much lower efficiency estimated by PG&E for balloons and line slap than was reported in PG&E's WMP?
b. Southern California Edison reported 99% effectiveness of covered conductor for both balloons and line slap in its GRC filing.1 Why is PG&E's estimate of covered conductor efficiency so low for these drivers?
c. In its response to RAMP-2024_DR_TURN_006-Q004, PG&E calculated that the observed efficiency of covered conductor inclusive of EPSS was 79.3%. Does this value have any relationship to the 79% efficiency PG&E claims for system wide effectiveness of overhead hardening and EPSS in its EUP?
d. For both balloons and line slap, provide the data analysis, statistics, and analysis that led PG&E to derive the numbers presented in PCS-6.

ANSWER 003

a. The values cited from PG&E's prior WMP are not directly comparable to the values presented in Table PCS-6 because the analyses reflect different mitigation scenarios and methodologies. PG&E assumes MGRA is referring to the Joint IOU Grid Hardening Working Group Report,[1] which cites results of various outage drivers.

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[1] Joint IOU Grid Hardening Working Group, Report: Update for 2026-2028 Wildfire Mitigation Plan, ACI 25U-03, Continuation of Grid Hardening Joint Studies (Mar. 19, 2025), Table 1, "PG&E Covered Conductor Mitigation Effectiveness Estimate. <https://www.pge.com/assets/pge/docs/outages-and-safety/outage-preparedness-and-support/aci-25u-03-continuation-of-grid-hardening-joint-studies.pdf> (Accessed Oct. 21, 2026).

In the EUP, Table PCS-6 presents the incremental effectiveness of Overhead Hardening with respect to the baseline wildfire risk condition that already includes EPSS and PSPS mitigations, whereas the WMP effectiveness values are derived with respect to a baseline condition without EPSS and PSPS mitigations. The covered conductor effectiveness values in WMP TABLE PG&E-8.2.1-3, are labelled to indicate which, if any, additional operational mitigations they include.

Accordingly, the differences in the balloon and line-slap values do not indicate that PG&E concluded covered conductor became less effective. Rather, we reflect differences in the mitigation scenario and analytical methodology being evaluated.

Please refer to PG&E's Mitigation Effectiveness Workpaper in the EUP (WP 001, Section 2.3.1, Vol 2, pp. 501-503) where we explain the incremental approach to mitigation effectiveness by mitigation type and the operational controls in place.

b. Covered-conductor effectiveness estimates are utility-specific and reflect differences in mitigation design, underlying data, failure-mode definitions, engineering assumptions, and analytical methodology.

   This distinction is supported by the Joint IOU covered-conductor work. The most recent Joint IOU Grid Hardening Working Group report[2] is particularly relevant. Using PG&E's methodology and historical outages classified according to WDRM v4 drivers, it reported PG&E Overhead Hardening effectiveness of 88% for Third Party (Balloon) and 85% for Primary Conductor-Line Slap. As detailed in that report, PG&E's overall effectiveness value is 67%, which increases to 79% when combined with EPSS and DCD, while SCE estimates a 60% effectiveness for its Wildfire Covered Conductor Program (WCCP) and SDG&E estimates a 44% effectiveness for CC at reducing wildfire risk.

   Thus, comparing individual driver values or overall effectiveness values across utilities without accounting for methodological differences can produce misleading conclusions. The 99% SCE estimate reflects SCE's methodology and assumptions and is not directly interchangeable with PG&E's reported values.

c. No, these values are distinct because they were derived through different analyses. The 79% value in the EUP and our 2027 GRC is based on our mitigation effectiveness analysis and reflects Overhead System Hardening combined with EPSS and DCD. That analysis uses engineering assessments of each mitigation's ability to prevent ignition across more than 2,700 combinations of *outage failure modes* and more than 100,000 historical outage failure events.

   The 79.3% value in RAMP-2024_DR_TURN_006-Q004 was a simple comparison of observed facility *ignition rates* on covered and bare conductor in HFTD/HFRA from 2018 through 2024 year-to-date. We provided the value in response to TURN's request which required the specific methodology. As we explained in our response, the limited number of ignitions observed on covered conductor is not sufficient to support a meaningful effectiveness calculation, and thus is not the method PG&E uses to establish mitigation effectiveness values.

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2 Id.

For PG&E's updated analysis and a more detailed explanation of the limitations of this methodology, please refer to PG&E's response to EUP-Ph1_DR_MGRA_002-Q005 and Attachment EUP-Ph1_DR_MGRA_002-Q005Atch01.

d. Please see the following attachment, *"EUP-PhI_DR_MGRA_003-Q003Atch01.xlsx,"* which provides the data, calculations, and results supporting the mitigation effectiveness values for Third Party – Balloon and Primary Conductor – Line Slap reported in Table PCS-6.

   Please see EUP Volume 2, Workpaper WP001 (Mitigation Effectiveness Analysis) that describes the approaches used to derive the mitigation effectiveness values.