Pacific Gas and Electric Company®

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BY ELECTRONIC COMMUNICATION

Office of Energy Infrastructure Safety (Energy Safety)
California Natural Resources Agency
715 P Street, 20th Floor
Sacramento, CA 95814

Re: PG&E's Electrical Undergrounding Plan (EUP) Docket No. EUP-PGE Non-Substantive Errata Ver. 2

Energy Safety:

Pursuant to Section 3.4 of the Office of Energy Infrastructure Safety's (Energy Safety's) 10-Year Electrical Undergrounding Plan Guidelines dated February 20, 2025 (Guidelines), Pacific Gas and Electric Company (PG&E) hereby submits non-substantive errata for the EUP. This submission is in addition to the errata PG&E submitted on October 12, 2026, which included both substantive and non-substantive items. This errata is submitted directly to the Docket because it is timely filed within 30 days of PG&E's filing of the EUP on September 30, 2026.

Good cause is established for the submission of the errata as indicated in Table 1 below. For each correction, PG&E identifies the applicable EUP page, section, and table or figure and provides a description of and reason for the correction. Redlined pages showing the corrections are provided in the associated attachments.

Table 1. Non-Substantive Errata

Item #	EUP Section(s), Page(s), Table(s) or Figures	Reason for Update	Attachment Reference
1. Text Edit	Volume 1: Chapter 3, Screen 3: Project Risk Analysis (p. 136)	Updated reference of "ACEE Cost Estimate 2 Classifications" to "AACE Cost Estimate 2 Classifications".	See Attachment 1
2. Text Edit	Volume 1: Chapter 7, Core Capability 4 (p. 317)	The text in Chapter 7, Section G.4.c is updated to clarify that Fire Weather Index (FWI) multiplier reflects projected changes in wildfire conditions and is applied to Wildfire, PSPS risks and also EPSS by adding the term "EPSS."	See Attachment 2

Item #	EUP Section(s), Page(s), Table(s) or Figures	Reason for Update	Attachment Reference
3. Text Edit	Volume 1: Chapter 7, Project Variable Modifiers (p. 350)	Adjustments made to subdriver mitigation effectiveness value from 98% to 95%, and 71% to 25% to align with Table PCS-6.	See Attachment 3
4. Text Edit	Volume 1: Chapter 9, Model Risk Landscape Variables Table (p. 397)	Modified the line 1 field name to read: "Scaled Wildfire Risk Post - PSPS and Post-EPSS" adding “Post-EPSS”.	See Attachment 4
5. Text Edit	Volume 2: Attachment B, Workpaper 005 (p. 527)	Updated reference in text from V11 to V12 in one instance.	See Attachment 5
6. Text Edit	Volume 2: Attachment C, Glossary of Terms (p. 1186)	Provided additional clarification on definition of Risk Density.	See Attachment 6
7. Text Edit	Volume 2: Attachment A-2, Table C.23 Subproject Management Template	Updated Table C.23 Subproject Management Template by removing an erroneous duplicate record for subproject Proj00028-3UG-UGAS.	See Attachment 7 and tabular data ZIP file
8. Text Edit	Volume 2: Attachment B, Workpaper 006 (p. 564)	Updated the exponent to be $t-1$, rather than t, so that O&M costs in the first year are undiscounted and each subsequent year is discounted by the appropriate number of periods.	See Attachment 8

Please let us know if you need any additional materials or clarifications.

Sincerely,

/s/ Justin Sadler

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ATTACHMENT 1

VOLUME 1: CHAPTER 3, SCREEN 3: PROJECT RISK ANALYSIS

Please see the PDF following this cover sheet.

- Industry-standard estimating practice (~~ACEE~~Association for the Advancement of Cost Engineering Cost Estimate Classifications), which recognizes that cost estimates developed during Project scoping are not yet fully mature;
- Energy Safety's recommendation in its decision on PG&E's 2026-2028 Base WMP to reduce the prior 50 percent estimate uncertainty range to 30 percent, reflecting improvements in data quality and modeling while still accounting for residual existing uncertainty in the decision-making process;[106] and
- Inherent uncertainty in modeled risk point estimates, driven by compounding assumptions, variability in inputs, and structural limitations of quantitative risk models.

Where the BCR results fall within this uncertainty range, PG&E evaluates site-specific factors that are not fully captured in quantitative models, namely the factors described in Section D.3.a.5 above: ingress and egress constraints, tree-strike exposure, and PSPS risk, to determine whether a more risk-reducing alternative is more prudent than overhead hardening.

The estimate uncertainty range therefore provides appropriate flexibility to select the safer, more risk-reducing option when modeled BCRs are close and known uncertainty exists. Below is a numerical example of how the 70 percent factor will be applied, in this example:

- 100 percent Undergrounding
- Screen 3 Alternative Mitigation
- Additional Comparison 2

We consider the 100 percent Undergrounding or an Additional Comparison alternative when the BCR is at least 70 percent of the BCR for the Screen 3 Alternative Mitigation, as shown below:

[106] Office of Energy Infrastructure Safety's (OEIS) Decision for the PG&E 2026-2028 Base Wildfire Mitigation Plan (Feb, 5, 2026), pp. 19-20.

ATTACHMENT 2

VOLUME 1: CHAPTER 7, CORE CAPABILITY 4

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Projects. PG&E models risk reduction and reliability improvements over time based on when underground lines are energized. We consider Ignition and Outage Program Risk reduction achieved when all Subprojects on a Circuit Segment are complete. Project timing may also influence Prioritization.

PG&E uses each Project's estimated completion year to model the timing of risk reduction and reliability benefits for EUP tracking and reporting. For the WBCA analysis, all Circuit Segments are evaluated using a common 2028 base year for comparability and to avoid distortion from climate Projections and discounting assumptions. For in-flight Projects, risk calculations are updated as Project definitions mature and accurate electric end dates are refined.

c. How Projections Reflect Modeling of Climate Change

Climate change is incorporated into WBCA risk benefits through annual climate multipliers. (See Attach. B, WP006.) Consistent with Core Capability 6, PG&E uses two climate variables: a FWI multiplier and a Heat Day multiplier. The FWI multiplier reflects projected changes in wildfire conditions and is applied to Wildfire, EPSS, and PSPS risks. The Heat Day multiplier reflects projected changes in sustained heat exposure and equipment performance and is applied to Wildfire, EPSS, and baseline Reliability risks. PG&E develops annual climate multipliers through 2092 and applies them to risk values in each model year. Public safety risk is not adjusted for climate change.

ATTACHMENT 3

VOLUME 1: CHAPTER 7, PROJECT VARIABLE MODIFIERS

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A Project Variable Modifier (PVM) is defined as a set of changes that are made to variables in the Risk Modeling Methodology to evaluate the effectiveness of a given Project or set of Projects and represent how PG&E values the efficacy of the Alternative Mitigations and Additional Comparisons.

PG&E defines PVMs as the values used in the WBCA to determine the effectiveness of a mitigation at the sub-driver level (where applicable). For example, when PG&E considers the impact that vegetation has on Wildfire Risk, we consider three vegetation sub-drivers: vegetation (branch); vegetation (trunk); and vegetation (other). The WBCA incorporates the mitigation effectiveness values for 21 sub-drivers that are then applied to each mitigation type. For example, when considering the effectiveness of mitigating wildfire impacts due to vegetation (trunk), the WBCA applies an effectiveness of approximately ~~98~~95 percent to undergrounding primary and an effectiveness of approximately ~~71~~25 percent to overhead hardening in combination with EPSS. The use of the specific PVM varies in how PG&E evaluates different mitigations at the Circuit Segment level.

A different approach applies when PG&E considers the mitigation effectiveness of alternatives against Outage Program Risk. For example, when considering the effectiveness of mitigating EPSS outage impacts, the WBCA applies an approximately 52 percent effectiveness to overhead hardening. For undergrounding primary lines, mitigation effectiveness for EPSS and PSPS risk is applied based on the extent of undergrounding, such that the undergrounded portion of a Circuit Segment is treated as fully mitigated for these Outage Program Risks. Risk reduction is applied proportionally for partially-undergrounded Circuit Segments.

The PVM values were originally calculated based on a failure mode level review. PG&E SMEs conducted this review by evaluating how successful a mitigation would be in mitigating risk resulting from specific combinations of unplanned outage events and equipment attributes (“failure modes”). PG&E’s SMEs assessed the effectiveness of each of the mitigation alternatives against more than 2,700 failure modes that occurred in our HFTD during wildfire season. The SMEs reviewed each of these failure modes, defined as an outage cause plus three additional attributes (supplemental cause, failed/involved equipment,

ATTACHMENT 4

VOLUME 1: CHAPTER 9, MODEL RISK LANDSCAPE VARIABLES TABLE

Please see the PDF following this cover sheet.

a. Model Risk Landscape Variables Table (EUP Guidelines Section 2.8.5.1)

The EUP must include a Model Risk Landscape Variables Table as referenced in Section 2.7 of these Guidelines, that lists each metric in the Large Electrical Corporation's Model Risk Landscape per the example below and report values at the highest available resolution. This table must include the numerical type of each metric, which risk factors that it addresses, the resolution of the modeling, indicate whether the metric is considered a KDMM, and identify what other metric(s) it is a precursor for.

PG&E's Model Risk Landscape Variables Table includes the information required in the EUP Guidelines Section 2.8.5.1. It lists each metric in our Model Risk Landscape and includes: (1) the numerical type of each metric; (2) the risk factors addressed; (3) the resolution of the modeling; (4) whether the metric is considered a KDMM; and (5) any metric(s) it is a precursor for. Table 9-3 below is the Model Risk Landscape Variables Table:

TABLE 9-3:
MODEL RISK LANDSCAPE VARIABLES TABLE

Line No.	Field Name	Type	Addresses	Resolution	Is KDMM?	Precursor to Metric(s)
1	Scaled Wildfire Risk post-PSPS and post-EPSS	Risk	Ignition Risk	Per Circuit Segment	No	BCR
2	Scaled PSPS Risk	Risk	PSPS Risk	Per Circuit Segment	No	BCR
3	PCEEE Risk	Risk	PCEEE Risk	Per Circuit Segment	No	BCR
4	Baseline Reliability Risk	Risk	Baseline Reliability Risk	Per Circuit Segment	No	BCR
5	Overall Utility Risk	Risk	OUR	Per Circuit Segment	Yes	N/A
6	Unscaled Wildfire Risk	Risk	Ignition Risk	Per Circuit Segment	Yes	Overall Utility Risk
7	Wildfire Likelihood	Probability	Ignition Risk	Per Circuit Segment	Yes	Wildfire Risk, Overall Utility Risk

ATTACHMENT 5

VOLUME 2: ATTACHMENT B, WORKPAPER 005

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Marsh computed a weighted average of the historical outcomes (42.3%) as its “maximum” bound for probabilistic attribution given a simulated wildfire event loss.

Not surprisingly, there were years in the composite data set where no PG&E assets were associated with a reported wildfire against a specific WSD driver. Following discussion with wildfire modeling experts from Guy Carpenter, Marsh selected a non-zero minimum (0.05%) floor instead of the historical zero to err on the conservative side. The selected floor avoided a “zero risk” possibility but was still small enough so not to unnecessarily skew potential losses higher.

Each simulated loss event, after it had been determined to be within the PG&E service area and distribution asset geo fence, was then probabilistically determined to be “attributed” to PG&E based on the cumulative losses as reported in the AIR event catalogue for that event.

AIR Catalogue and IED

The Marsh analysis uses the 10,000-year AIR Worldwide Corporation’s (“AIR”) wildfire event catalogue (“catalogue”) and its industry exposure database (IED) as available through AIR’s Wildfire Model ~~V11~~V12 as implemented in its Touchstone platform. Marsh is not using Touchstone’s native probabilistic modeling capabilities. Instead, the Marsh approach uses the full event catalogue and the IED as the basis for a Marsh-developed probabilistic Monte Carlo simulation.

The AIR wildfire model is an event-based model that stochastically captures wildfire risk to property within the 13 westernmost US states, including California. Marsh only used the California catalogue for its analysis. The catalogue is a collection of simulated events that capture the frequency, severity, location and other characteristics of the entire spectrum of plausible wildfire ignitions and associated loss outcomes.

Events in the catalogue include ignition points, total area burned, spatial distribution of each simulated wildfire, and associated losses. Though the catalogue itself is 10,000 years, years may have more than one wildfire, resulting in hundreds of thousands of wildfire events in the catalogue 100 acres or greater.

Fire size, frequency, and seasonality of simulated fires are based on several factors but primarily reflect simulated weather and fuel conditions within an ecoprovince. Ecoprovinces are regions with similar ecosystems, climate, and vegetation and these physical elements are key drivers of fire behavior. Frequency of events is also driven by historical total area burned per year and per month in each ecoprovince. Historical fire data is drawn from the USDA Forest Service’s Fire Occurrence Database (FOD).

Wildfire event damage reflects a combination of fire intensity data and property exposure characteristics. AIR models wildfire intensity within its proprietary spread model, and includes fire characteristics such as flame length, rate of spread, and fuels reaction intensity. Building exposure characteristics include construction type, occupancy, roofing and siding material, and defensible spaces.

ATTACHMENT 6

VOLUME 2: ATTACHMENT C, GLOSSARY OF TERMS

Please see the PDF following this cover sheet.

Reliability Risk

Risk associated with power outages and service interruptions.

Remote Grid

A standalone energy system used to replace overhead lines and enable line removal.

Reserve Miles

Additional planned Undergrounding Project miles that can be advanced if necessary.

Risk Density

Risk density represents the concentration of risk within a given unit of infrastructure, typically expressed as risk per mile. PG&E used wildfire risk density as the basis for ranking locations by risk per mile and prioritizing locations for advancement through the screening process. This approach helps identify where system hardening investments can achieve the greatest risk reduction per mile treated. ~~While total risk reflects overall exposure, risk density helps identify where mitigation investments can achieve the greatest risk reduction per mile treated. PG&E uses risk density to target system hardening resources to the portions of the system where they can most effectively reduce risk.~~

Risk Model Change Factor for Ignition Risk

An adjustment input to the Risk Model Impact Factor that represents the observed variance across Ignition Risk models (e.g., WDRM v3 (previous version of the wildfire risk model) vs. WDRM v4 (current version of the wildfire risk model).

Risk Model Change Factor for Outage Risk

An adjustment input to the Risk Model Impact Factor that represents the observed variance in Outage Risk models (e.g., Interruption Cost Estimate (ICE) 1.0 vs. ICE 2.0 value of service).

Risk Model Impact Factor

An adjustment factor, derived from the Risk Model Change Factors for Ignition Risk and Outage Risk, that quantifies the overall impact of risk model updates on Overall Utility Risk. The Risk Model Impact Factor is applied to key performance metrics, including the Plan Mitigation Objective and Plan Tracking Objective, to account for changes in modeled risk resulting from updates to the

ATTACHMENT 7

VOLUME 2: ATTACHMENT A-2, TABLE C.23

Please see PGE_EUPERR_2026-10-30_Tabular Data_R0.zip and reference the following file:

- PGE_EUPERR_2026-10-30_T23_R0.csv

ATTACHMENT 8

VOLUME 2: ATTACHMENT B, WORKPAPER 006

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Formula
$$Present\ Value\ of\ O\&M\ Costs = \sum_{t=1}^{Asset\ Lifetime} \frac{Annual\ O\&M\ Costs}{(1 + Real\ Discount\ Rate)^{t}} \frac{Annual\ O\&M\ Costs}{(1 + Real\ Discount\ Rate)^{t-1}}$$

Annual O&M costs are converted to present value O&M costs by projecting the applicable annual cost stream over the expected asset life and discounting those future costs to present value using the real discount rate. This calculation is performed separately for both the baseline scenario and each mitigation alternative using the applicable cost assumptions. The net lifetime O&M cost attributable to a mitigation is then calculated as the difference between the mitigation lifetime O&M cost and the baseline lifetime O&M cost. This incremental lifetime O&M cost is included in the lifetime cost denominator used in the BCR calculation.

4. Output

The WBCA evaluates the lifetime costs and monetized risk-reduction benefits of each mitigation alternative at the circuit-segment level. For each evaluated mitigation, the model produces a BCR, which compares the present value of lifetime risk-reduction benefits to the present value of lifetime costs. The BCR provides a consistent framework for comparing mitigation alternatives across circuit segments and supports wildfire mitigation planning by identifying where specific mitigations provide the most significant risk reduction relative to cost.

PG&E evaluates WBCA outputs alongside additional planning considerations that are outside the scope of the model, including factors such as ingress/egress considerations, residual tree-strike exposure, constructability constraints, and other program-specific requirements. As a result, WBCA serves as an important decision-support input, but is not the sole determinant of mitigation selection.

4.1. Benefit Cost Ratio Calculation (BCR)

Overview: The BCR provides a point-in-time estimate of the relative value of a mitigation alternative by comparing the present value of lifetime risk-reduction benefits to the present value of lifetime costs. The BCR is based on the model inputs, assumptions, and system conditions represented in the WBCA analysis and should be interpreted as a comparative planning metric rather than a prediction of future realized outcomes. A higher BCR indicates that a mitigation achieves greater risk reduction per dollar spent relative to alternatives with lower BCR values based on this point-estimate.

Figure 9 illustrates the overall BCR framework. The numerator consists of the net present value (NPV) of lifetime mitigated risk, including wildfire, public safety, Baseline Outage, EPSS, and PSPS benefits. The denominator consists of the NPV of all lifetime mitigation costs, including installation capital costs and incremental O&M costs relative to the baseline. The resulting ratio provides a standardized measure for comparing mitigation alternatives on a consistent basis across circuit segments.