

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

PG&E Data Request No.:	CalAdvocates_043-Q004		
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Request Date:	April 12, 2024	Requester DR No.:	CalAdvocates-PGE-2025WMP-07
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PG&E Witness:		Requester:	Holly Wehrman

**System hardening alternatives analysis**

Table ACI-PG&E-23-05-3 on page 55 of PG&E's 2025 WMP Update lists 10 possible alternatives PG&E anticipates using in its WBCA. Questions 1 through 9 relate to this table.

**QUESTION 004**

The table notes, "All of these effectiveness values represent a blended average effectiveness at the circuit segment level with the exception of 'Alt. 9 – REFCL, CC Overhead, EPSS and DCD' which is a substation effectiveness score. Not all substations are capable of having REFCL applied, and it cannot be isolated to a circuit segment only."

- a) Explain the difference in "substation effectiveness score" and "blended average effectiveness at the circuit segment level."
- b) Does alternative nine assume that, for circuits where REFCL cannot be applied to the substation, there are no mitigations applied?
- c) If the answer to part (b) is yes, state the basis for this assumption.
- d) Describe how PG&E would implement alternative 9 on circuits served by substations where REFCL could be applied.
- e) Describe how PG&E would implement alternative 9 on circuits served by substations where REFCL could not be applied.

**ANSWER 004**

- a) "Substation effectiveness score" starts with a pass/fail preliminary review. All requirements for REFCL must be met to pass. The preliminary screening requirements are:
  - Single voltage 3 wire 12 kV substation;
  - Minimum of 20 OH miles in HFTD;
  - No Autotransformer located inside the substation;
  - The total charging current not exceeding 167 Amps for each Distribution Transformer Bank in a substation; and

- Less than 20% of circuit mileage past autotransformers outside of the substation

Blended average effectiveness refers to the average effectiveness of REFCL based on weather days with instantaneous off/on.

- b) For substations where REFCL cannot be applied due to technical feasibility, we excluded these from the study all together. Therefore, Alternative 9 only shows effectiveness on substations that met the high-level requirements for REFCL implementation.
- c) The substations that were excluded were not included in the base dataset for the REFCL effectiveness calculation.
- d) To implement REFCL on these circuits, additional engineering review of the substation layout would be performed to ensure adequate room for installation of the REFCL equipment and review of substation and distribution equipment ratings to identify necessary upgrades to allow for REFCL operation. REFCL would be applied independently of other mitigations. Additional CPZ level review would be needed to determine which segments should receive covered conductor and which should include underground in a blend such that we don't compromise REFCL.
- e) PG&E would not implement alternative 9 on substations that do not meet the preliminary review for REFCL requirements. These substations would be evaluated for Alternatives 1-8.