

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

PG&E Data Request No.:	CalAdvocates_008-Q006		
PG&E File Name:	WMP-Discovery2023_DR_CalAdvocates_008-Q006		
Request Date:	March 30, 2023	Requester DR No.:	CalAdvocates-PGE-2023WMP-08
Date Sent:	April 5, 2023	Requesting Party:	Public Advocates Office
DRU Index #:		Requester:	Holly Wehrman

SUBJECT: 2023-2025 WMP SUBMISSION

QUESTION 006

PG&E states on p. 539 of its WMP:

Additional Operational Mitigations such as PVD and DCD will also help to mitigate risk previously prescribed to EVM. As a result, PG&E concluded the EVM Program at the end of 2022...⁹

- a) Does “PVD” stand for “Partial Voltage Detection” in this instance? Please define if not.
- b) Does “DCD” stand for “Downed Conductor Detection” in this instance? Please define if not.
- c) How has PG&E determined that PVD will help to mitigate risk that PG&E previously sought to mitigate with EVM?
- d) Which particular risks will PVD help mitigate that PG&E previously sought to mitigate with EVM?
- e) Please provide any available documentation and analysis showing that PVD will help to mitigate risks that PG&E previously sought to mitigate with EVM.
- f) How has PG&E determined that DCD will help to mitigate risk that PG&E previously sought to mitigate with EVM?
- g) Which particular risks will DCD help mitigate that PG&E previously sought to mitigate with EVM?
- h) Please provide any available documentation and analysis showing that DCD will help to mitigate risks that PG&E previously sought to mitigate with EVM.

ANSWER 006

- a) Yes, “PVD” refers to Partial Voltage Detection.

⁹ PG&E’s WMP, p. 539.

- b) Yes, “DCD” refers to Downed Conductor Detection.
- c) Partial Voltage Detection (and subsequent force outs of the nearest upstream SCADA capable device) are part of a “defense in depth” strategy that supplements the already highly effective baseline Enhanced Powerline Safety Settings (EPSS). In particular, Partial Voltage Force Out actions and DCD both mitigate high impedance faults, which are very difficult to detect for traditional protection schemes. In 2022, 36 Partial Voltage detections and Force Outs occurred. In 11 of 36 force outs, hazards were identified that could have caused an ignition. These hazards included wire down and/or vegetation contact.
- d) As indicated in response c, PVD is a mitigation measure for high impedance faults, which can occur when vegetation contacts a powerline or a downed conductor. PVD is also able to provide detection for transformer backfeed high impedance faults.
- e) PVD increases the ability to mitigate high impedance fault conditions, which can occur following vegetation contact with a powerline. These benefits have the potential to add extra protection or complement EPSS. PG&E determined that EPSS mitigates risk which PG&E previously sought to mitigate with EVM and sees PVD as part of a defense and depth strategy to supplement EPSS. PG&E did not separately compare PVD to EVM.
- f) DCD is part of a “defense in depth” protection strategy that will become an added component of the already highly effective EPSS. DCD mitigates high impedance ground faults, which are very difficult to detect for traditional protection schemes. DCD detects and de-energizes faults as low as 1 amp primary ground current and trips in 1 second as compared to the existing Sensitive Ground Fault detection, which trips at a minimum of 15 amps, typically in 15 seconds. PG&E has performed lab testing which has shown DCD is able to detect and de-energize downed conductors reducing ignition risk where installed.
- g) DCD is an automated protection element that is expected to mitigate high impedance ground faults.
- h) DCD also increases the ability to mitigate high impedance ground fault conditions, which can occur following vegetation contact with a powerline. These benefits have the potential to add extra protection or complement EPSS. PG&E determined that EPSS mitigates risk which PG&E previously sought to mitigate with EVM and sees DCD as part of a defense and depth strategy to supplement EPSS. PG&E did not separately compare DCD to EVM.