

**PACIFIC GAS AND ELECTRIC COMPANY  
Wildfire Mitigation Plans Discovery 2022  
Data Response**

PG&E Data Request No.:	OEIS_008-Q01		
PG&E File Name:	WMP-Discovery2022_DR_OEIS_008-Q01		
Request Date:	April 1, 2022	Requester DR No.:	OEIS-P&GE-22-008
Date Sent:	April 6, 2022	Requesting Party:	Office of Energy Infrastructure Safety
PG&E Witness:		Requester:	Kevin Miller

**SUBJECT: DISTRIBUTION ARCING FAULT SIGNATURE LIBRARY**

**QUESTION 01**

In section 7.3.2.2.6, Distribution Arcing Fault Signature Library, PG&E described completing an R&D project at the end of 2021, and the AH&PC team performed a strategic assessment of the results. PG&E then determined that the outcome of the pilot was not sufficient to develop a comprehensive fault signature library applicable to the larger incipient fault analytics tools that will be used to proactively detect and mitigate conditions that might result in a wildfire. And that no future actions are planned at this time.

- a. Please provide the details from the assessment of the results from the R&D project and what the limitations were that lead to the decision to no longer pursue the initiative.

**ANSWER 01**

This project was deployed on a single high event circuit in the Peninsula region. Two types of sensors were deployed to capture electrical and mechanical data. The Electrical Phenomena Cluster (EPC) utilized a fiber optical sensor with very high dynamic range. It was installed at the substation and collected voltage, current, vibration and acoustic signals. Micro Phase Measurement Units (mPMU) were installed in two locations. One at the substation, and the other near the end of circuit and measured voltage and current. Data was collected for eight months from January 2021 through August 2021.

The EPC sensor did not perform as expected and did not provide any useful waveform data. Data from PMU sensors did not provide any additional waveform classification benefits beyond existing waveform classification results already available through other technologies, including Distribution Fault Anticipation (DFA) and Line Sensors, both of which are being deployed in high wildfire threat areas as part of PG&E's WMP commitments. Since no additional waveform data was produced as a result of this R&D effort, the decision was made not to take additional actions with this project, at this time.