

*Southern California Edison*  
*2022-WMPs – 2022 Wildfire Mitigation Plan Updates*

**DATA REQUEST SET O E I S - S C E - 2 2 - 0 0 3**

**To: Energy Safety**  
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**Response Date: 3/25/2022**

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**Question 14:**

Continuous Monitoring:

- a. Regarding SCE's response to Question D.1.c, SCE selects that as of January 2023, there will be sensorized, continuous monitoring equipment determining the state and reliability of equipment.
  - i. What continuous monitoring equipment is this referring to?
  - ii. Does SCE plan to have all its HFRA covered by continuous monitoring equipment by 2023? If so, provide SCE's timeline for installation of implementation of type of continuous monitoring equipment. If not, provide the number and percentage of circuits that will be covered by continuous monitoring equipment.
  - iii. When does SCE plan to supplement scheduling inspections with information from continuous monitoring equipment?

**Response to Question 14:**

As part of the response to Question D.1.c in the 2020 Maturity Model Response, SCE stated that SCE has already deployed technologies that can detect and report potential malfunctions before they cause ignition. MADEC, an industry leading technology developed by SCE, which remotely detects wire down signatures and other system anomalies by examining AMI voltage data, enabling SCE operators to proactively isolate potential problems on SCE's distribution grid, has been broadly applied across SCE's service area. SCE is continuing to advance the detection algorithm used in MADEC. Additionally, SCE is using meter data to support detection of internal degradation of transformers prior to failure. Both the MADEC detection system and the transformer monitoring logic are applied across the HFRA and non-HFRA.

With specific reference to EFD and DFA:

- i. Additionally, Distribution Fault Anticipation (DFA) and Early Fault Detection (EFD) are other aspects of continuous monitoring equipment SCE installed across HFRA Distribution circuits.
- ii. Approximately 20% of HFRA circuits have DFA units installed. Additional installations are not planned for 2022 or 2023. This year, SCE will focus evaluating alerts, events and data collection from installed DFA devices. DFA units are applied at the circuit level and provide coverage of the related circuit.

For EFD, in 2021, SCE had a total installed population of approximately 123 EFD units, including 100 on circuits previously equipped with DFA in order to compare and contrast their detection

capabilities, 13 EFD units on sub-transmission circuits, and 10 units on circuits with previously identified issues through IR Scanning (to allow for technology comparison). In 2022, SCE will install an additional 50 units and strive to add up to 150 EFD units. These installation quantity targets for 2022 efforts, and the prior installation base, are expected to cover around 5-8% of SCEs total HFRA circuitry. Note that EFD can be applied for both distribution and transmission voltage levels. The circuit counts are not available for this future prediction as EFD is intended to be applied per HFRA circuit mile, and the amount of circuit miles varies for each circuit. EFD sensors are applied on circuits around every 3-5 miles of circuitry, with a range of 3 miles between sensors on distribution circuits and 5-miles between sensors on transmission circuits.

iii. DFA alerts are evaluated and events of interest are selected for further inspection and analysis. For EFD, since this technology is still new and in pilot mode, SCE does not have a process in place to supplement scheduling inspections with information from EFD. Site evaluations initiated from EFD alerts are conducted separately from conventional inspection programs at this time.