

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

DATA REQUEST SET OEIS - SCE - 22 - 005

To: Energy SafetyEnergy Safety

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Question 01 :

Covered Conductor Joint Response

- a. This joint response on covered conductor effectiveness states “[s]everal covered-conductor-specific failure modes exist that require operators to consider additional personnel training, augmented installation practices, and adoption of new mitigation strategies (e.g., additional lightning arrestors, conductor washing programs, etc.)” (ps. 7-8):
- i. What additional training has SCE implemented for personnel pertaining to these covered conductor failure modes? Please list all trainings, the frequency at which trainings are required to be taken, and which personnel are required to take the trainings. Include the trainings used to train personnel for inspections, maintenance, and installation of covered conductor.
 - ii. How has SCE augmented its installation practices to prevent these covered conductor failure modes?
 - iii. What new mitigation strategies has SCE adopted to prevent these covered conductor failure modes?

Response to Question 01 :

a. Prior to deploying covered conductor at scale, SCE performed extensive research and evaluation of covered conductor and benchmarked with multiple utilities.¹ Through these activities, SCE learned of various covered conductor-specific failure modes. SCE then incorporated solutions for these failure modes into its design and construction standards. These efforts, including the trainings discussed below, were developed prior to the joint IOU covered conductor effectiveness workstream.

- i. SCE developed construction standards that address the prevention of known covered conductor failure modes. These standards and other applicable work practices are incorporated into a self-directed training program specifically for installing covered conductor. Training material is always accessible to SCE field personnel when needed.

SCE includes covered conductor-specific questions in its overhead inspection forms. Inspectors are trained when new questions are introduced. Please see SCE’s response to OEIS-SCE-22-002 Q. 07 where SCE provides a list of covered conductor-specific questions found on the inspection form.

The list of trainings used to train personnel for inspections, maintenance, and installation of

¹ See SCE’s Covered Conductor Compendium that was included in the November 1, 2021 Progress Report.

covered conductor are as follows:

- Covered Conductor Self-Directed Training
- Performing Aerial Distribution Inspections for 2022
- New-to-Role Training for Electrical System Inspectors (ODI)
- Distribution Overhead Detail Inspection Inspect App Training

ii. The following are covered conductor installation practices that SCE adopted that are different than bare wire to prevent covered conductor-specific failure modes:

1. Increased lightning arrester usage: SCE follows its high lightning area standard in terms of lightning arrester usage on covered conductor systems, regardless of the actual lightning density in the area.
2. Increased use of wildlife covers: Unlike bare wire, covered conductor requires the removal of the covering in order to make mechanical or electrical connections. SCE uses wildlife covers to protect the exposed energized conductor from contact with objects, such as wildlife, vegetation, or metallic balloons.
3. Use of polymer insulators: SCE only allows the use of polymer insulators with covered conductor. The use of porcelain insulators is not allowed because it can potentially cause electrical damage to the covering.

Note that other covered conductor-specific failure modes are addressed through the design of the covered conductor covering. The covered conductor covering is UV resistant, abrasion resistant, track resistant, and environmental stress-crack resistant. These properties help ensure that the covered conductor can withstand external environmental factors such as UV, mechanical abrasion, and contamination.

iii. While Aeolian vibration is not a covered conductor-specific failure mode and can affect bare wire as well, SCE has included the vibration damper retrofit program as a new wildfire mitigation activity (identified as SH-16 in SCE's 2022 WMP Update). The installation of vibration dampers can minimize long-term conductor failure-caused vibration. The vibration damper retrofit program targets 2018-2020 covered conductor installations in high and medium vibration susceptibility areas. Please refer to OEIS-SCE-22-002 Q. 05 for more details.