

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

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PG&E Witness:		Requester:	Holly Wehrman

QUESTION 004

- a) In a typical bare conductor to covered conductor conversion project, is the intention to maintain, increase, or decrease the load capacity at peak operating temperatures?
- b) Explain the reasoning for your response to part (a).

ANSWER 004

- a) The intention behind converting bare conductor to covered conductor is to lower the risk of catastrophic wildfire. When converting from bare conductor to covered conductor, we ensure that we maintain the load capacity at peak, at a minimum. We also work with our Distribution Planning team to scale the design for forecasted load growth where required.
- b) Designing the system to maintain current capacity and voltage systems allows for continuity not only in the load profile and customer service expectations, but also switching capabilities we have established to handle regular operation and system maintenance.

PG&E designs for two basic systems in primary electric distribution: tap-line and mainline.

Tap-lines are typically served by fuses and interrupters and are generally serving less than 100 amps. Our new minimum wire sizes are 1/0 aluminum conductor steel reinforced (ACSR) XLPE tree wire (non corrosion), #2 copper (CU) XLPE tree wire (corrosion), and 1/0 aluminum (AL) EPR for UG. Each of these conductor sizes can serve greater than 150 amps so typically all that is required if load is forecasted higher is a change in protection either to a larger fuse or through the application of a recloser or interrupter. If the load forecast is greater that what can be solved through protection upgrades alone, we would consider extending additional mainline conductor through the area to offload the tap-lines and providing a system capable of handling that load.

Mainlines are typically the backbone of the system served by circuit breakers and line reclosers. Our wire sizes are 715.5 all aluminum conductor (AAC) XLPE tree wire, 397.5 (AAC) XLPE tree wire, 1,100 AL EPR for UG, and 600 AL EPR for

mainline UG further out on the circuit. Each of these conductor/cable choices can serve more than 400 amps and are typically based on their forecasted load, voltage needs, reactive power flow, and operational capacity requirements in the area. Additional measures included in mainline design are voltage regulators, capacitors for reactive power management, mainline protection and SCADA, as well as considerations for new ties and mainline to manage customer count and new business/forecasted improvements. In addition, where the load forecast may exceed our maximum wire size or capability of the circuit, we may choose to install spare UG conduit along-side the new underground systems to support future circuits.