Southern California Edison
R.18-10-007 – SB 901

DATA REQUEST SET S E D - S C E - 0 0 4

To: SED
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Response Date: 3/12/2019

Question 05: RAMP – Chapter 10 Wildfire Questions:
5. Pg. 10-13: D2b Conductor failures: Given that this is a significant driver at 9%, where short circuits are a major cause of conductor failure, what specific protection schemes or equipment changes reduce the probability of short circuits during RFW or extreme weather conditions? What is the proportional probability of reduction of conductor failure attributed to each of these protection measures? (Please put in a spreadsheet and include the reduction in risk as a percentage.)

Response to Question 05:
SCE objects to the question on the grounds that the requested details, (*i.e.*, "probability of short circuit," "probability of reduction of conductor failure," "reduction in risk as a percentage") are vague, ambiguous, and overbroad. Notwithstanding these objections, SCE responds as follows:

SCE has not calculated "proportional probability of reduction of conductor failure" attributed to specific protection schemes or equipment changes. SCE notes that risk is a function of both probability and consequence considerations, and the details of SCE's risk analysis regarding wildfire mitigation options is presented in SCE's November 2018 RAMP report.

Based on the question, SCE is providing the following additional relevant observations regarding protection schemes, equipment changes, and short-circuit probabilities:

Because conventional distribution protection schemes react to short-circuits, they inherently have little direct impact on the probability of short-circuits during RFW or extreme weather conditions. One exception to this is the extent to which such protection schemes prevent reclosing into persistent short-circuits. For example, blocking of reclosing during RFW or extreme weather conditions would not impact the probability that a short-circuit condition initially takes place, but would impact the probability that this short-circuit will be experienced multiple times during the same operational event.

Equipment changes via like-for-like infrastructure replacement (*i.e.*, replacement of existing equipment with elevated probability of failure with newer equipment) will reduce the probability of short-circuits during both normal conditions and RFW or extreme weather conditions alike.

Equipment changes via "non-like-for-like" infrastructure replacement (*i.e.*, replacement of existing equipment with elevated probability of failure with a different type of newer equipment) can result

in a greater reduction in the probability of short-circuits during both normal conditions and RFW or extreme weather conditions alike. For example, replacement of existing bare conductor with newer covered conductor will have both infrastructure replacement benefits (*i.e.*, general reduction in short-circuit probability due to replacement of aging infrastructure) and driver-specific benefits (*i.e.*, specific reduction in "contact from object" short-circuit probabilities due to the introduction of the wire cover).